

The committee had struck out the latter part of Section 58 of the original Bill (Section 61 of the Bill as it now stood), laying down maxima rates and tolls: it was found quite impossible that the council should go into the many questions which of necessity arose on any attempt to draw out such a schedule: it required an accurate and detailed knowledge of the trade of the port, and it appeared to the committee better to leave details of this sort to be determined from time to time by a scale of rates to be framed by the commissioners and approved by the Lieutenant-Governor.

Section 70 empowered the commissioners to apply to the collector of customs to detain ships for non-payment of tolls; and under Section 71 the officer of Government, whose duty it should be to grant a port-clearance, could be restrained from granting it, in the case of any vessel in respect of which any rates or tolls were due, until the vessel had paid all demands.

Section 89 was rather an important section. It determined the powers conferred upon the Justices of the Peace for Calcutta under Act VI. of 1863 in respect of any part of the river or river-bank of the port.

There were some other sections of the Bill which had undergone more or less alteration at the hands of the committee, but they were not of sufficient importance to justify his taking up the time of the council in explaining their provisions.

The motion was agreed to.

THE PRESIDENT said that contrary to the usual practice he should take the title of the Bill first, as he wished to submit to the council the expediency of altering its present form. The title of the Bill originally was "a Bill to provide for the maintenance and improvement of the Port of Calcutta". He found that the change to the present title, "a Bill to provide facilities for the landing and shipment of goods in the Port of Calcutta," had caused some disappointment outside, and that would be a good reason in itself, though the title of a Bill did not affect its provisions, for considering any reasonable alteration of the title. Moreover he thought, looking to what the Bill really provided for, that it would be admitted that if the title of the Bill was originally too large, it was now too restricted; because the expression "provide facilities for the landing and shipment of goods," hardly embraced such a clause as that contained in Section 38—the construction and application of dredges and other machines for cleaning, deepening, and improving the river-bed within the port—and certainly did not include the provision in Section 39 to which the hon'ble mover of the Bill had made special reference, namely, the power to charge for steam tugs.

There was another reason why he (the President) proposed to amend the title of the Bill. He might mention that he hoped to be in a position at some future meeting to propose the addition of some sections which would give power to the Government, at a future time, considerably to enlarge the purposes for which commissioners were to be appointed as specified in the Bill: and therefore he now proposed to the council for their consideration the substitution of the following title for that which stood in the Bill as amended by the select committee:—"a Bill to appoint commissioners for making improvements in the Port of Calcutta."

MR. ROBINSON said that he had not signed the report of the select committee from having been out of town at the time the report was sent in circulation; but it had been correctly noted by the assistant secretary that if he had been here he should have reserved to himself the right to object to some of the provisions of the Bill as amended by the select committee. The remarks that had just fallen from the President had disarmed him of a great many of the objections he was desirous of making as to the limitation of the powers proposed to be conferred on the commissioners, and with reference to that he would beg the attention of the council to the statement of objects and reasons under which the Bill was brought forward. It was there stated—

"It has however been deemed inexpedient to burden the local Government with the direct detailed administration of the port and of its improvement, and the Bill has accordingly been prepared with the object of constituting a mixed board of commissioners to whom that administration may be committed."

It had appeared to him all along that the Bill as placed before the council did not meet the object there stated, for the commissioners were so entirely confined to the executive management of a certain part of the business of the port, subject so closely to the orders and control of the Government of Bengal, that it appeared to him that the Bill would have entailed an additional burden on the Government in supervising and controlling these commissioners as well as the marine department and conservator of the port. It was always understood by the commercial community, that the introduction of any legislation on the subject would be with the object that the port itself should actually be placed under the control of the commissioners, subject only in some measure to the supervision of the Government. Some persons had gone so far as to think that that control should be extended from the northern limits of the port to the Sandheads. Without going so far as that, he had always felt that there would be great difficulty in getting the proposed division of authority within the port itself, to work harmoniously, and without retarding instead of expediting business. It certainly was provided in the Bill that the commissioners might call on the conservator to do certain acts, such as removing vessels when necessary, but it appeared to him that it would be far more satisfactory if it was placed in the power of the Government to arm the commissioners, at some future time, with the full powers necessary for the working of the port as now conducted by the conservator. The Bill altogether was an experiment: nothing of the kind had been

tried yet within the limits of the port, and he would beg to point out that it would be impossible that this scheme ever should work satisfactorily and for the benefit of the trade of the port, unless gentlemen were found of real experience and influence to sit on the proposed commission, and he did not think therefore that it would be wise to limit the duties of the commissioners within the scope of the present Bill. If the Bill were given more extended scope, and the commissioners were vested with real authority, there would be no difficulty in finding gentlemen of the commercial community to serve on the commission, and give their best attention to the objects of the Bill.

Another reason for considering the subject on a more extended scale was that he could not help thinking that the commercial interests of Calcutta now stood in considerable jeopardy. The opening of the Suez canal, and short communication with Europe by a new class of steamers in connection with the through line of rail to Bombay, would divert a considerable part of the commerce of Calcutta to the western port. He had not found any one prepared to give a decided opinion on this subject. Dependent as it was on so many conditions and changes, the exact bearing of which could not be seen until the new lines of communication were more fully at work, it was difficult to arrive at a positive conclusion: yet there was a feeling, which he confessed was in himself a very strong one, that Calcutta would have to withstand a most serious competition with the western port, especially in its commerce with the Adriatic, the Mediterranean, and the Black Seas. It was not easy to realise the decadence of a great emporium of trade such as Calcutta, but the history of the world has shown that these changes of lines of commerce do take place and with great rapidity, influenced by very trivial circumstances and by very trifling errors of judgment committed in the first instance. On that ground he would urge on the council that legislation on this subject should be no half-hearted measure. He was sure that if the Government would really call to its aid and give a fair amount of authority and discretion to those merchants who may sit on the commission, and whose interests would be so seriously involved in its useful working, it would influence them in coming to correct and useful conclusions, and he was sure that the Bill would then be readily accepted by the public, and would tend to the benefit of the business of the port.

As he understood the rules of the council, there was no occasion for him to close his remarks with any definite resolution, His Honor the President having communicated to the council that the Government were prepared to consider the expediency of some such extension of the scope of the Bill as he (Mr. Robinson) advocated; therefore having fulfilled his duty, and having acted in accordance with the manner in which his name appeared in the report of the select committee, he would leave the matter in perfect confidence in the hands of the Government, until the additions to the scope of the Bill indicated by His Honor were definitely placed before the council.

THE HON'BLE ASHLEY EDEN said that he had heard with some surprise the statement made by the hon'ble member who spoke last, that he was not only prevented by absence from town from signing the report of the select committee, but that he did not think the title of the Bill was sufficiently comprehensive. He (Mr. Eden) understood that the hon'ble member had been present in select committee when the subject was discussed, and that he had agreed to the alteration in the title.

[MR. ROBINSON explained that his meaning had been misunderstood: he had, it was quite true, agreed to the amended title as being more suited to the scope of the Bill as it at present stood; but he was all along of opinion that the scope of the Bill should be considerably extended.]

MR. EDEN continued—He regretted that he had not distinctly heard the hon'ble gentleman's last remark. His recollection of the matter was that it was unanimously agreed by the select committee that the original title of the Bill was not a correct indication of its real objects and scope. The committee never considered the propriety of extending the scope of the Bill. It was not in accordance with their instructions to extend the operation of the Bill, which was based mainly on instructions received from the Supreme Government. The committee were of opinion that great misunderstanding had arisen from the title of the Bill being so much more comprehensive than the Bill itself; and the result of this had been an impression on the public mind that there would be clashing between the commissioners and the officers of the port appointed under Act XXII of 1853, who had jurisdiction throughout the port. For that reason the committee thought it would be better to prevent this false conception gaining ground, by changing the title of the Bill from "a Bill to provide for the maintenance and improvement of the Port of Calcutta," to "a Bill to provide facilities for the landing and shipment of goods in the Port of Calcutta." That was the only reason why the title of the Bill had been altered. He had not the slightest objection to the enlargement of the title under the altered conditions now for the first time suggested to the council: he quite admitted that if the proposed prospective sections were introduced, the title of the Bill should be altered, and any way he thought that possibly the present title was too restricted.

THE PRESIDENT said that he had only to add that although, as he had said before, he certainly hoped to see some clause or clauses introduced which would enable a prospective extension of the measure to be effected, yet even if that were not to be done, he should consider the title as proposed to be amended quite applicable to the Bill as it stood.

The motion was then agreed to.

The consideration of Section 1 was postponed.

Section 2 was agreed to with an amendment similar to that made in the title of the Bill.

Sections 3 and 4 were agreed to.

In Section 5 amendments of a similar nature were also made, and the section was then agreed to.

Section 6 was agreed to.

The consideration of Sections 7 and 8 was postponed.

Sections 9 and 10 were agreed to.

Section 11 was agreed to, after the correction of a clerical error.

Section 12 related to the disqualifications of commissioners, and provided amongst other things that every person who at any time after his appointment as a commissioner shall accept or agree to accept any office or place of profit under this Act, except the office of vice-chairman of the commissioners, should thenceforth cease to be a commissioner, and his office should thereupon become vacant.

THE PRESIDENT said that as the Bill was originally drawn it was contemplated that the chairman should be the paid officer of the commission, but the Bill was subsequently altered, and as it now stood the vice-chairman would be the executive officer. It had since occurred to him (the President) that although that arrangement was one that commended itself to him under present circumstances, it might not always be the same, and it was desirable that the Act should be so framed that either the chairman or the vice-chairman might be appointed the paid officer of the commission. He (the President) therefore proposed to amend the substantive provision on that subject contained in Section 15, and to make the necessary amendment in the section under consideration by the insertion of the words "chairman or" before the word "vice-chairman" in line 11.

The motion was carried, and the section as amended agreed to.

Section 13 empowered the Lieutenant-Governor to remove from office any chairman or vice-chairman.

THE PRESIDENT said that he had seen it stated that the reason for removal should be stated in the order, because if no reason was given the Government might arbitrarily remove a chairman or vice-chairman. In his (the President's) opinion there were great objections to the stating of the reasons for which alone the Government would remove a chairman or vice-chairman, nor did he believe that the officer removed would himself desire that the reasons for his removal should be publicly stated.

MR. ROBINSON said that he quite agreed with the President: it would neither be consistent with the dignity of the office of the Lieutenant-Governor, nor to the interest of the member of the commission removed, that the reasons for the removal should be stated.

The section was then agreed to, and so also was Section 14.

Section 15 was amended on the motion of THE PRESIDENT by the inclusion of the chairman as one of the officers who might be paid by salary, and of the vice-chairman as an officer who might be paid by fees, in case the chairman were appointed the paid executive officer.

Section 16 was agreed to after the correction of a clerical error.

The consideration of Sections 17 to 19 was postponed.

Section 20 was agreed to.

The consideration of Section 21 was postponed.

Section 22 was agreed to, with several verbal amendments rendered necessary by the amendment made in Section 15.

Section 23 was agreed to.

In Section 24 five members of the commission, instead of four, were, on the motion of MR. WYMAN, fixed as the number that should constitute a quorum at meetings of the commissioners.

Section 25 was agreed to.

Section 26 was agreed to after an amendment necessitated by the alteration made in Section 15.

Section 27 was agreed to.

The consideration of Sections 28, 29, and 30 was postponed.

Sections 31, 32, and 33 were agreed to.

Section 34 gave the commissioners power to contract for the execution and supply of works, stores, &c., with a proviso that no contract for a greater sum than Rs. 20,000 should be valid without the assent of the Lieutenant-Governor.

On the motion of MR. EDEN the limit was raised to Rs. 50,000, and the section was then agreed to.

The consideration of Section 35 was postponed.

Sections 36 to 40 were agreed to.

The consideration of Section 41 was postponed.

Sections 42 to 48 were agreed to.

Section 49 related to the preparation of estimates by the commissioners, and their submission to the Lieutenant-Governor for approval.

MR. ROBINSON said that as the effect of this section would be almost identical with the 29th section, empowering the Lieutenant-Governor to disallow any resolution of the commissioners, it appeared to him desirable to postpone the consideration of this section also. It gave positive and final powers to the Government of Bengal to pass any orders upon the estimates framed by the commissioners. This was a most important power, which could be so exercised, as to overturn all the acts and proceedings of the commissioners. He did not, however, think that any dead-lock would be arrived at, but it was imposing most serious restrictions on the commissioners, who were supposed to be an independent body and exercise an independent judgment.

THE HON'BLE ASHLEY EDEN said that the section under consideration referred to the annual estimates to be prepared by the commissioners of the works and expenditure proposed for the year, and was entirely different from the other provision to which the hon'ble member alluded, which referred to the resolutions of the commissioners. Surely when the funds for carrying on the works were mainly to be supplied by the Government, it was absolutely necessary for the Government to possess the power of saying what amount of money it could give in the year. This was the very least that could be expected. When the estimate of proposed expenditure came before Government, Government should possess the power to say whether or not it was possible to make the money available during the year. If this section was not passed the whole control of Government would cease, and Government would be perfectly helpless in the hands of the commissioners. He (Mr. Eden) saw nothing at all unreasonable in the provision.

MR. ROBINSON said he thought that the hon'ble member had overshot the mark in saying that Government would have to provide the funds whether it approved of the estimate or not. There was nothing whatever in the Bill to bind the Government to provide funds for the purposes of the commission. Suppose the commissioners made exorbitant demands, the Government could refuse to supply the funds. As he understood it, the powers of the Government were ample, and he did not think it possible that the business of the port would be now brought to a dead-lock by any difference of views between the commissioners and Government on the point of expenditure.

THE PRESIDENT said that he was quite willing to agree to the postponement of the section for further consideration. But he agreed with the hon'ble member on his left (Mr. Eden) in feeling that there was no analogy between this section and Section 29. He could quite understand objection being taken to Section 29, because obviously it might interfere with the powers of the commissioners in their executive capacity. Section 29 gave the Government power to disallow any resolution of the commissioners; but Section 49 was quite a different matter. It simply provided for the annual estimates of income and expenditure. There could be no doubt that the Government would have to provide for whatever expenditure was to be incurred: and though the hon'ble member who spoke last said that the Government were not bound to provide funds, yet if Government accepted the estimate for any particular work, it would be impossible for the Government to refuse to provide the necessary funds to carry out that estimate. As at present advised, he (the President) thought there was good reason why Section 49 or some such section should stand part of the Bill, but he was quite willing that the section should stand over for further consideration.

The further consideration of the section was then postponed.

Sections 50, 51, and 52 were agreed to.

Section 53 provided that no person, save the commissioners, should be empowered to construct wharves and jetties within the port without the consent of the Lieutenant-Governor.

MR. MONEY said he thought the commissioners would have fair ground of complaint if the Lieutenant-Governor gave his consent to the erection of a wharf or jetty without consulting them. He thought the approval of the commissioners should be a necessary preliminary to the construction of any work of the kind contemplated. He therefore moved the insertion of the words "approval of the commissioners and the" before the word "consent" in line 6.

THE HON'BLE ASHLEY EDEN said that he dissented from the opinion of the hon'ble member. Under the amendment of the hon'ble member the officers of the marine department could not lay down moorings without obtaining the consent of the commissioners. Until the whole conduct of the port was made over to the commissioners it would be quite impossible to make any such provision. Independently, however, of the Government moorings, it would be inexpedient to place the Peninsular and Oriental Company, the Messageries Imperiales, and other large companies under the control of the commissioners in this respect. It seemed to him (Mr. Eden) that the commissioners were very likely to take a restricted view of the matter, and require the mail steamers to be brought up to their jetties for loading and unloading, whether it suited the convenience of the public or not. Therefore in this matter it was very desirable that the Government should have the right to give consent to certain classes of works being constructed within the port, independently of the consent of the commissioners.

THE PRESIDENT said that he must express his agreement with the views of the hon'ble member who had just spoken. Under present circumstances at all events it would be going too far to place absolute uncontrolled power in the hands of the commissioners to refuse consent to the laying down of moorings or the construction of the other works specified in the section.

MR. MONEY's motion was then put and negatived.

MR. MONEY said he still thought that some provision of the kind was required. The Government might, without consulting the commissioners, sanction the construction of some works that might clash with perfectly different works proposed to be erected by the commissioners: unless the section provided for the Government consulting the commissioners in some way or other, serious inconveniences and difficulties might arise.

MR. ROBINSON said that perhaps the best way would be to postpone the consideration of the section, as there was a possibility of some alterations being made in the powers proposed to be conferred on the commissioners. Possibly this was a matter that would be more satisfactorily determined when the actual powers of the commissioners were defined.

THE HON'BLE ASHLEY EDEN said that the sections which His Honor the Lieutenant-Governor intended to propose referred to some future time, and their provisions could not in any way affect the present discussion. It seemed to him to be unreasonable to provide that the Government should consult any particular authority before passing an order. Of course Government could always consult whom it liked without any legislation on the subject, and unless it was intended that Government was to be bound to follow the advice it got, he could not understand the proposal that the Lieutenant-Governor should consult the commissioners: his doing so or not doing so would really leave matters just as they were. As a matter of fact, no doubt, he would consult them in cases of doubt.

THE PRESIDENT said that it seemed to him that it would be a very unusual provision to give a substantive power and then to tie up the exercise of it by prescribing that the authority to exercise the power was to consult some body else.

After some further conversation, the section was agreed to without amendment.

Section 54 gave power to the commissioners to remove wharfs, jetties, &c., erected without the consent of the Lieutenant-Governor within one mile of the port, in case the limits of the port should be extended so as to include such places.

MR. WYMAN thought that the limit of one mile was too restricted: the limits of the port might in time extend beyond that distance.

THE HON'BLE ASHLEY EDEN said the river-bed below high-water mark was the property of the crown, and even without this section it was unlawful to construct any works on any part of the river bank below high-water mark, without the consent of the Government. He saw no object in limiting the distance to one mile.

MR. WYMAN said that if it was not competent legally for any one to construct works below high-water mark, he did not see the reason for fixing any limit whatever. The better plan would be to enact that no one should erect any works on the river bank below high-water mark, and that if they did, the works would be liable to compulsory removal without compensation. He therefore moved the omission from line 6 of the words "within one mile of," and the substitution for them of the word "without."

The motion was carried, and the section was then agreed to.

Sections 55 to 57 were agreed to.

The council was adjourned to Saturday, the 26th instant.

Buoys and Channels of the Mutlah.

From CAPTAIN H. HOWE, Officiating Master Attendant, to the Secretary to the Government of Bengal, General Department,—(No. 796, dated Fort William, the 11th February 1870.)

I HAVE the honor to submit, for the information of His Honor the Lieutenant-Governor, copy of a letter from the officiating Conservator of Port Canning, reporting that the commander of the buoy vessel *Dolphin* has completed the overhaul of the buoys outside of Halliday's Island.

2. I beg also to submit copy of a further communication from Mr. Beresford, relative to the closing up of the South Catallee channel, and with reference thereto to state that, with His Honor's permission, I propose to depute Mr. Pearson, assistant river surveyor, to the Mutlah to ascertain if any other changes have occurred.

From W. J. C. BERESFORD, Esq., Officiating Conservator of Port Canning, to CAPTAIN H. HOWE, Officiating Master Attendant, Calcutta,—(No. 16, dated Port Canning, the 8th February 1870.)

I HAVE the honor to forward copies of buoy reports of the river Mutlah from the commander of the buoy vessel *Dolphin*, who has completed the overhaul of the buoys outside of Halliday's Island.

From W. MADGE, Esq., Commander, Buoy Vessel *Dolphin*, Port Canning, to W. J. C. BERESFORD, Esq., Officiating Conservator of Port Canning,—(Dated Port Canning, the 5th February 1870.)

I HAVE the honor to report having laid the Bulcherry reef and upper eastern and upper western Bulcherry buoys, also shifted the lower eastern and centre western Bulcherry buoys into position.

Bulcherry Reef

Is a first-class spire buoy marked M., painted red, surmounted with two baskets; it lies on the S. E. side of the Bulcherry sand in $6\frac{3}{4}$ fathoms reduced, bearing from it to

The lower eastern Bulcherry ... N. E. by N. $\frac{1}{4}$ N.

Lower centre buoy ... N. by W. $\frac{1}{4}$ W.

M. buoy, old position, N. W., distant 400 yards.

This buoy was laid with every thing new on the 28th of January 1870. The old buoy has been removed.

Upper Eastern Bulcherry

Is a second-class spire buoy, painted black, marked N. E. B.; it lies on the S. W. side of the Roy Mutlah dry patch, in 4 fathoms reduced, with the following bearings:—

Spit buoy ... N. W. by N. $\frac{1}{4}$ N.

Lower eastern Bulcherry ... S. E. by S.

Centre Western Bulcherry ... W. $\frac{1}{4}$ S.

This buoy was laid on the 31st of January 1870 in lieu of wrecks removed.

Upper Western Bulcherry.

Is a second-class spire buoy, painted red, marked C. B.; it lies on the N. E. side of the Bulcherry sand in 4 fathoms reduced, with the following bearings from it to:—

Upper Dalhousie ... E. $\frac{1}{4}$ S.

Ring buoy ... S. E. $\frac{3}{4}$ S.

This buoy was laid with every thing new on the 2nd February 1870 in lieu of one lost in the cyclone of June 1869.

Lower Eastern Bulcherry.

Is a second-class spire buoy, painted black, marked L. E. B.; it lies on the S. W. edge of the Roy Mutlah in 5 fathoms reduced, with the following bearings:—

Lower centre Bulcherry ... West.

M. buoy ... S. W. by S. $\frac{1}{4}$ S.

This buoy was laid on the 17th of January 1870 with every thing new, in lieu of buoy wrecked and drifted on the Roy Mutlah, but afterwards recovered—but lost the mooring, the chain parting.

Centre Bulcherry.

Is a second-class spire buoy, painted red, marked C. B.; it lies on the east side of the Bulcherry sand in 4 fathoms reduced, with the following bearings from it:—

Spit buoy ... N. by E. $\frac{1}{4}$ E.

Upper centre Bulcherry ... N. $\frac{3}{4}$ W.

This buoy was laid on the 27th November 1869 with every thing new, in lieu of buoy wrecked and drifted and since recovered.

From W. MADGE, Esq., Commander, Buoy Vessel, *Dolphin*, Port Canning, to W. J. C. BERESFORD, Esq., Officiating Conservator of Port Canning,—(dated Port Canning, the 5th February 1870.)

I HAVE the honor to report having overhauled the following buoys and left them in the order opposite their respective names:—

Ring buoy	...	Changed.
Upper Dalhousie	...	Good order.
Lower "	...	Ditto.
" middle ground, eastern	...	Ditto.
Anchoring buoy	...	Changed.
Roy Mutlah buoy	...	Good order.
" reef	...	Changed with a 2nd class buoy.
Upper Bangadoony	...	Ditto.
Bangadoony reef	...	Ditto.
Lower middle ground western	...	Good order.
Spit	...	Changed.
Upper centre, Bulcherry	...	Good order.
Lower " "	...	Changed.

From W. MADGE, Esq., Commander, Buoy Vessel *Dolphin* Port Canning, to W. J. C. BERESFORD, Esq., Officiating Conservator of Port Canning,—(dated Port Canning, the 7th February 1870.)

I HAVE the honor to report that while coming up the South Catallee, I found the channel nearly closed, the breadth of the channel being only 150 yards, to the best of my judgment. I consider this channel unsafe for ships, and should recommend it to be closed for the present.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY MAIN LINE.

*Approximate Return of Traffic for Week ended 13th March 1870 on 1,131 miles open.**

	COACHING TRAFFIC.			MERCHANDISE AND MINERAL TRAFFIC.			Total Traffic Receipts.
	Number of Passengers.	Coaching Receipts.		Weight carried.	Receipts.		
		Rs. As. P.	£. s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£. s. d.
Total Traffic for the week ...	1,16,440½	1,87,953 12 10	17,229 2 0	7,47,837 30	*4,32,413 3 9	39,037 17 7	50,866 19 7
Or per mile of Railway ...	.....	166 2 11	15 4 8	.....	382 5 3	35 0 11	50 5 7
For previous 9 weeks of half-year...	10,98,711	20,59,765 9 11	1,88,720 3 9	65,05,675 10	33,52,298 6 9	3,53,127 7 1	5,41,947 10 10
Total for 10 weeks ...	12,15,151½	22,46,719 6 9	2,05,949 5 9	72,53,513 0	42,84,711 10 6	3,92,765 4 8	5,98,714 10 5
COMPARISON.							
Total for corresponding week of previous year ...	1,07,901	1,73,095 5 8	15,966 3 2	8,17,290 30	4,54,091 3 8	41,624 2 3	57,490 5 5
Per mile of Railway corresponding week of previous year ...	.....	153 0 7	14 0 7	.....	401 7 10	36 10 1	50 10 9
Total to corresponding date of previous year ...	10,60,269	17,77,979 6 3½	1,62,981 8 11	78,25,237 20	43,70,500 3 9	4,00,635 10 2	5,63,616 19 1

* Rs. 27,519-14-6 added on account of freight of locomotive coal carried on Jubbulpore line.

EAST INDIAN RAILWAY JUBBULPORE LINE.

Approximate Return of Traffic for Week ended 13th March 1870 on 223 miles open.

		Rs. As. P.	£ s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	3,470½	16,030 9 1	1,469 9 4	46,400 30	12,646 1 6	1,159 4 0	2,628 13 10
Or per mile of Railway ...	.....	71 14 2	6 11 9	.....	56 11 4	5 4 0	11 15 9
For previous 9 weeks of half-year...	64,150½	1,86,446 13 3	17,090 19 3	4,29,855 0	1,09,729 6 3	10,058 19 6	27,149 9 9
Total for 10 weeks ...	67,621	2,02,477 6 4	18,560 8 7	4,76,255 30	1,22,375 7 9	11,217 15 0	29,778 3 7
COMPARISON.							
Total for corresponding week of previous year ...	3,978½	8,353 19 4	765 15 0	69,669 30	15,192 15 9	1,592 13 10	2,153 8 10
Per mile of Railway corresponding week of previous year ...	.....	37 7 4	3 8 8	.....	68 2 1	6 4 11	9 13 7
Total to corresponding date of previous year ...	38,276½	1,22,411 1 6	11,221 0 4	5,73,024 20	1,57,428 19 5	14,439 19 2	25,651 19 6

EASTERN BENGAL RAILWAY.

Approximate Return of Traffic for Week ended 12th March 1870 on 113½ miles open.

		Rs. As. P.	£ s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	28,744½	16,910 4 6	1,550 2 2	1,29,827 25	19,042 8 6	1,745 11 4	3,295 13 4
Or per mile of Railway ...	254	149 5 1	13 13 9	1,067 0	168 2 4	15 8 3	29 2 9
For previous 10 weeks of half-year...	2,51,956½	1,68,188 15 6	15,417 6 5	9,34,983 0	1,48,733 1 2	13,633 17 4	29,051 3 9
Total for 11 weeks ...	2,80,700	1,85,099 4 0	16,957 8 7	10,55,810 25	1,67,775 9 8	15,379 8 8	32,349 17 3
COMPARISON.							
Total for corresponding week of previous year ...	29,657	16,589 6 5	1,529 12 1	1,19,736 20½	20,593 5 6	1,897 14 5	3,408 6 6
Per mile of Railway corresponding week of previous year ...	257	146 7 7	13 8 6	1,057 0	181 13 5	16 13 5	30 1 11
Total to corresponding date of previous year ...	2,71,136	1,76,926 4 0½	16,209 1 5	11,07,790 19½	1,97,184 6 1	19,075 4 6	34,234 6 1

CALCUTTA AND SOUTH-EASTERN STATE RAILWAY.

Approximate Return of Traffic for Week ended 12th March 1870 on 28 miles open.

		Rs. As. P.	£ s. d.	Mds. S.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	6,187½	1,477 0 5	135 7 10	13,864 20	478 3 6	43 16 2	179 4 0
Or per mile of Railway ...	221	53 12 0	4 16 8	493 0	17 1 7	1 11 4	6 8 0
For previous 10 weeks of half-year...	51,491	9,599 13 3	871 14 7	1,30,871 20	5,299 2 9	483 9 4	1,354 14 11
Total for 11 weeks ...	57,678½	10,986 13 3	1,007 2 5	1,44,736 0	5,747 5 9	526 17 0	1,553 19 5
COMPARISON.							
Total for corresponding week of previous year ...	5,063½	1,633 0 3	94 13 10	23,208 28	954 2 0	87 9 4	182 2 3
Per mile of Railway corresponding week of previous year ...	182	58 14 3	3 7 7	831 0	34 1 3	2 2 6	6 10 1
Total to corresponding date of previous year ...	57,562½	12,028 19 4½	1,102 14 6	1,62,406 10	6,831 7 0	626 4 3	1,728 18 9

Meteorological Telegraphic Report for the period 19th to 25th March 1870.

STATIONS.	Date.	Hour.	Barometer reduced to 32°.	Barometer reduced to sea-level.	THERMOMETER.		Humidity Sat. = 100.	WIND.		Rain.	Weather initials.	Clouds.
					Dry.	Wet.		Direction.	Velocity.			
CALCUTTA.	Mar.		Inches.		°	°				Inches.		
	19th	10	29.973	29.991	79.0	69.5	60	W S W	...	...	b	
	19th	16	29.843	29.861	86.0	70.5	62	W by S	...	...	...	C
	20th	10	29.955	29.973	83.5	75.0	65	W S W	...	...	...	C
	19th	16	29.838	29.856	89.8	71.2	36	W N W	...	...	...	S
	21st	10	29.992	30.010	83.6	71.0	42	E N E	...	...	...	C
	19th	16	29.857	29.875	92.0	71.7	34	W	...	...	...	C
	22nd	10	29.975	29.993	83.3	76.0	60	S W	...	...	b	
	16	29.824	29.842	2.15	74.0	38	W	...	...	...	...	KC
	23rd	10	29.951	29.969	85.6	72.0	48	S W	...	...	b	
SACCOO ISLAND.	19th	10	29.805	29.823	84.0	74.3	36	W S W	...	...	...	C
	19th	16	29.977	29.995	80.6	70.0	55	N W	...	...	...	S
	20th	10	29.827	29.845	8.5	73.2	44	W	...	...	...	CS
	19th	16	29.893	29.910	82.7	75.0	67	W S W	...	...	...	C
	19th	16	29.761	29.769	91.0	71.8	36	W by S	...	...	...	K
	19th	10	30.009	30.015	81	74	70	W N W	1	...	b	C, CK
	19th	16	29.884	29.890	84	73	53	S S W	1	...	b	C, K
	20th	10	29.955	29.961	82	78	62	S W	1	...	b	C
	19th	16	29.867	29.873	81	78	75	S W	1	...	b m	N
	21st	10	30.010	30.016	84	78	75	W S W	2	...	b	C
CHITTAGONG.	19th	16	29.890	29.896	84	79	79	S S W	2	...	b	C
	22nd	10	29.972	29.978	83	80	87	W S W	1	...	b	C
	19th	16	29.859	29.865	84	80	83	S W	1	...	b	CK
	23rd	10	29.960	29.966	83	80	87	W N W	1	...	b	U
	19th	16	29.840	29.846	87	78	65	S W	1	...	b, m, u	N
	24th	10	30.013	30.019	84	73	56	N N W	3	...	b, u, g, o	N
	19th	16	29.838	29.844	88	72	43	N N E	1	...	b	KS
	25th	10	29.916	29.922	86	76	61	W	1	...	b	C, CK
	19th	16	29.801	29.807	85	78	71	S W	2	...	b u, g, o	KS
	18th	10	29.773	29.783	79	78	73	N W	5.7*	0.60	b, v, t, r, l	KS
MADRAS.	19th	16	29.705	29.706	82	75	70	E	3.6*	...	b	KS
	19th	10	29.783	29.797	73	62	59	S S E	3.2*	...	b	KS
	19th	16	29.782	29.783	84	72	53	W	7.0*	...	b	CK
	20th	10	29.850	29.870	82	72	59	N	3.0*	...	b	CS
	19th	16	29.777	29.883	85	73	54	W S W	7.2*	...	b	C
	21st	10	29.772	29.882	86	74	54	N W	3.3*	...	b	
	19th	16	29.789	29.899	87	75	55	W	8.3*	...	b	CK, KS
	22nd	10	29.804	29.974	87	73	46	N	4.5*	...	b m	
	19th	16	29.707	29.876	91	73	39	W S W	8.5*	...	b	
	23rd	10	29.848	29.958	87	77	61	N E	3.2*	...	b	
COYLUCK.	19th	16	29.743	29.851	91	77	50	S W	8.6*	...	b m	C
	24th	10	29.818	29.927	91	79	56	S	4.3*	...	b	K, CK
	19th	16	29.732	29.844	74	74	10.0	S W	13.8*	...	b q	
	19th	10	29.973	30.008	85	76	44	E N E	0*	...	b o	C
	19th	16	29.855	29.885	84	75	64	E N E	1.1*	...	b o	C, K, CS, S
	20th	10	29.926	29.984	84	73	60	E by N	4*	...	b e	C
	19th	16	29.860	29.896	84	75	64	E S E	1.1*	...	b o	C, CK
	21st	10	29.978	30.008	87	77	61	E S E	6*	...	b o	C
	19th	16	29.892	29.922	85	75	60	E	1.1*	...	b o	C
	22nd	10	29.992	30.022	85	75	60	E	6*	...	b o	C
ASAR.	19th	16	29.881	29.911	85	76	64	E by N	...	...	b o	C
	23rd	10	29.978	30.008	85	75	60	E N E	...	...	b o	C
	19th	16	29.851	29.881	85	77	70	N by E	1.3*	...	b o	C
	24th	10	29.961	29.991	89	77	56	S W by S	6*	...	b o	CK, N
	19th	16	29.826	29.856	85	77	68	S E by E	1.4*	...	b	C
	25th	10	29.937	29.967	86	76	61	S by E	0*	...	b o	C
	19th	16	29.894	29.964	86	76	61	S E	1.2*	...	b	C
	19th	10	29.976	30.050	79	69	58	W by S	7.2*	...	b	C
	19th	16	29.790	29.878	86	70	41	W by N	15.1*	...	m	C, K, CS, S
	20th	10	29.967	3.1040	85	78	71	W	8.7*	...	m	C
COYLUCK.	19th	16	29.790	29.872	89	70	35	W by N	7.2*	...	m	C, CK
	21st	10	29.968	30.041	82	70	62	S	5.5*	...	f, m	C
	19th	16	29.818	29.9.0	89	70	35	E	9.7*	...	m	C, CK
	22nd	10	29.933	30.013	81	72	53	N W	8.1*	...	m	C
	19th	16	29.791	29.873	85	70	44	S W	19.3*	...	t, l, l, r, v, u	CK, N
	23rd	10	29.935	30.017	83	74	61	S by E	9.6*	...	m	C
	19th	16	29.806	29.889	89	74	74	S W	15.7*	...	t, l, l, r, v, u	C
	24th	10	29.931	30.014	76	71	77	N by W	19.2*	...	...	N
	19th	16	29.798	29.880	86	71	44	N W	9.2*	...	...	C
	25th	10	29.865	29.951	82	74	66	W	16.1*	...	...	CS
ASAR.	19th	16	29.790	29.812	89	71	37	N W	6.9*	...	...	CK, CS
	18th	10	29.999	30.014	77	74	80	N E	1	1.10	b	C, K, CK
	19th	10	29.883	29.893	83	77	75	N W	1	...	b	C, CK, CS
	19th	16	29.843	29.858	83	79	50	N E	1	...	b	
	19th	16	29.843	29.843	83	74	63	N W	1	...	...	C, CS
	20th	10	29.890	29.905	84	72	53	N W	1	...	b	K
	19th	16	29.794	29.800	83	74	63	N W	3	...	b	C, CK
	21st	10	29.993	29.993	81	72	62	Calm	...	...	b	C
	19th	16	29.817	29.832	85	78	71	N W	1	...	b	C, CS, S
	22nd	10	29.913	29.958	83	72	56	Calm	...	...	b	
ASAR.	19th	16	29.793	29.805	87	73	55	N W	1	...	b m	
	23rd	10	29.917	29.932	85	74	57	N E	1	...	b	
ASAR.	19th	16	29.815	29.830	85	74	57	N W	2	...	b	C, CS, CK, K

* Velocity of wind in miles per hour.

CALCUTTA,
The 26th March 1870.HENRY F. BLANFORD,
Meteorological Reporter to the Govt. of Bengal.

Weekly Report of Rainfall compiled at the Meteorological Reporter's Office.

Circuit.	STATIONS.	Rain from 7th to 13th March 1870.	Rain from 14th to 20th March 1870.	RAIN FROM 1st JANUARY 1870.		REMARKS.
				Rain.	Up to date.	
		Inch.	Inch.	Inch.		
SOUTH-WESTERN.	Pooree ...	Nil	Not received	Nil	13th March 1870	
	False Point ...	0.30	ditto	0.30	ditto.	
	Cuttack { Telegraph Office ...	0.60	Nil	1.60	20th March 1870.	
	{ Jail ...	0.65	Not received	1.70	13th March 1870.	
	Sambulpore ...	Not received	ditto	3.30	6th March 1870.	
WESTERN.	Balasore ...	0.12	0.52	1.82	20th March 1870.	
	Midnapore ...	Nil	0.50	1.10	20th March 1870.	
	Bancoorah ...	ditto	0.10	0.45	ditto.	
	Chyebassa ...	0.10	0.38	1.08	ditto.	
	Purulia ...	0.14	0.04	1.40	ditto.	
CENTRAL.	Burdwan ...	Nil	Nil	0.20	ditto.	
	Raneegunge ...	ditto	0.02	0.17	ditto.	
	Sooree ...	Not received	Not received	Nil	30th Jan. 1870.	
	Deoghur ...	ditto	ditto	0.40	6th March 1870.	
	Burhee ...	0.10	0.25	0.80	20th March 1870	Not received 3rd to 16th Jan. and 7th Feb. to 6th Mar.
NORTH-WESTERN.	Hazareebaugh ...	Nil	Not received	0.28	13th March 1870	Not received 14th to 20th Feb.
	Saugor Island ...	0.20	Nil	0.20	20th March 1870.	
	Contai ...	Not received	Not received	Nil	13th Jan. 1870.	
	Calcutta ...	0.03	Nil	0.80	20th March 1870.	
	Howrah ...	Nil	ditto	1.42	ditto.	
NORTHERN.	Hooghly { Jail ...	0.10	ditto	1.10	ditto.	
	{ College ...	Not received	Not received	.....	.....
	Jessore ...	0.04	1.33	1.60	20th March 1870	
	Kishnagur ...	Nil	0.02	0.18	ditto	Not received 1st to 16th Jan.
	Ranaghat ...	ditto	Nil	Nil	ditto	Not received 1st Jan. to 6th Feb.
NORTH-EASTERN.	Bongong ...	0.10	ditto	0.40	ditto	Not received 1st to 9th Jan.
	Melhapore ...	0.50	ditto	0.50	ditto	Not received 1st Jan. to 6th Feb.
	Choodangah ...	Nil	ditto	Nil	ditto	Not received 1st Jan. to 6th Feb.
	Berhampore ...	ditto	Not received	ditto	13th March 1870.	
	Furzedpore ...	ditto	ditto	ditto	ditto	Not received 7th to 13th Feb.
EASTERN.	Barrisaul ...	ditto	ditto	ditto	ditto.	
	Bhaugulpore ...	Nil	Nil	0.60	20th March 1870.	
	Mouhlyr ...	ditto	ditto	0.16	ditto.	
	Patna ...	ditto	0.04	0.08	ditto.	
	Arrah ...	ditto	0.10	0.10	ditto.	
SOUTH-EASTERN.	Buxar ...	ditto	0.06	0.21	ditto.	
	Chuprah ...	ditto	Nil	Nil	ditto.	
	Chumparan ...	Not received	Not received	ditto	6th March 1870	Not received 3rd to 6th Jan.
	Benares ...	Nil	Nil	0.05	20th March 1870.	
	Rampore Beaulah ...	Nil	Nil	Nil	20th March 1870.	
SOUTHERN.	Pubna ...	0.02	0.06	0.08	ditto.	
	Maldah ...	Nil	Nil	Nil	ditto	Not received 21st to 27th Feb.
	Bograh ...	ditto	0.07	0.07	ditto	Not received 1st to 9th Jan.
	Dinapore ...	ditto	Nil	1.20	ditto	Not received 14th to 20th Feb.
	Rangpore ...	Not received	Not received	Nil	6th March 1870	Not received 21st to 27th Feb.
SOUTHWESTERN.	Julpigoree ...	Nil	Nil	ditto	20th March 1870	Not received 28th Feb. to 6th March.
	Baza ...	Not received	Not received	.....	.....
	Darjeeling ...	0.62	0.71	2.54	20th March 1870.	
	Gawalparah ...	Nil	Not received	0.15	13th March 1870	
	Gowhaty ...	0.10	0.00	1.40	20th March 1870.	
SOUTHEASTERN.	Shillong ...	0.25	Not received	0.55	13th March 1870.	
	Nongong ...	Not received	ditto	0.70	6th March 1870	Not received 1st Jan. to 13th Feb.
	Tezpora ...	0.40	ditto	1.75	13th March 1870.	
	Dhoibagaun ...	0.15	ditto	1.85	ditto.	
	Seebaugor ...	0.20	ditto	1.80	ditto.	
SOUTHERN.	Debronghur ...	Not received	ditto	9.05	6th March 1870	Not received 1st to 9th Jan.
	Samogoodding ...	0.25	ditto	0.75	13th March 1870	Not received 1st and 2nd Jan.
	Cherra Poonjee ...	Not received	ditto	.....	.....
	Dacca ...	Nil	0.75	0.75	20th March 1870	Not received 10th to 16th Jan. and 14th to 20th Feb.
	Mymensing ...	0.02	Not received	0.07	13th March 1870.	
SOUTHWESTERN.	Sylhet ...	Nil	ditto	0.80	ditto.	
	Cachar ...	ditto	ditto	0.90	ditto.	
	Aemkhal Hylakandy ...	ditto	ditto	0.84	ditto.	
	Tipperah ...	ditto	ditto	0.10	ditto.	
	Noakhally ...	0.20	ditto	0.20	ditto.	
SOUTHEASTERN.	Chitra { Telegraph Office ...	Nil	0.60	0.70	20th March 1870.	
	{ Jail ...	ditto	Not received.	0.13	13th March 1870.	
	Rangamata Hill ...	ditto	ditto	1.00	ditto.	
	Akyab ...	ditto	1.10	1.10	20th March 1870.	

CALCUTTA,
The 26th March 1870.HENRY F. BLANFORD,
Meteorological Reporter to the Govt. of Bengal.

Mean Pressures and Temperatures of the preceding Table reduced to sea level, with mean Wind directions.

STATIONS.	Mean Barometric pressure reduced to sea level.	Mean Temperature reduced to sea level.	Proportional prevalence Max=00.	Mean direction.
Port Blair	29.623	78.8	21	N 77° E
Madras	29.901	78.8	27	N 1° W
Akyab	29.901	78.8	27	N 1° W
False Point	30.019	70.5	23	N 43° E
Cuttack	29.998	68.9	18	N 31° E
Saugor Island	29.980	68.9	24	N 48° E
Chittagong	29.955	68.9	24	N 25° W
Calcutta	29.960	68.9	23	N 10° W
Jessore	29.930	68.9	27	N 2° E
Dacca	29.947	66.8	24	N 48° W
Cachar	29.977	64.0	19	S 4° E
Hazareebaugh	29.977	67.3	26	N 66° W
Barhampore	29.998	66.0	23	N 41° W
Patna	29.980	60.1	18	S 83° W
Monghyr	29.963	62.0	23	S 66° W
Darjeeling	29.862	63.6	4	S 55° E
Gowalparah	29.955	66.1	16	S 79° E
Shillong	30.012	65.3	4	N 30° W
Benares	30.023	60.2	3	N 74° W
Roorkee	30.023	60.2	3	N 74° W

NOTE.

Barometric Pressure.—The pressures in column 2 of the above Table for all stations below 500 feet are reduced from those given in column 3 of the Table on the previous page by adding the weight of a column of air of the temperature given in column 17. For stations of above 500 feet elevation, the reduction is made by Dippe's Table as given in Guyot's Meteorological and Physical "Tables."

Temperature.—The temperatures in column 3 are deduced from those in column 17, on the preceding page, by adding 1° Fahr. for every 350 feet.

Wind Direction.—The mean wind direction and its comparative prevalence are calculated from the whole number of wind observations recorded during the half-month, an equal value (2) being assigned to each day's observations, so that the maximum (exclusive prevalence of one wind) would be 30. The mean direction is calculated in the usual way by the sines and cosines of the compass points.

The above being all comparable, afford the data for constructing a meteorological chart for the half-month, which shall shew the isobaric and isothermal lines, and the resultant wind directions, which last may be represented by arrows of varying length proportioned to the prevalence of the wind. To these may be added the rainfall from the previous Tables.

HENRY F. BLANFORD,

Meteorological Reporter to the Government of Bengal.

Abstract of Observations as received in the Meteorological Reporter's Office, Calcutta,

DURING THE HALF MONTH FROM 1st TO 15th JANUARY 1870.

N. B.—The Barometric data are reduced for temperature, and not for height above sea level.

STATIONS.	BAROMETER.				THERMOMETER.										HUMIDITY.				RAIN.				
	Height above sea level.	MEAN OF				Range.	SOLAR RADIATION.				Mean of max.	Mean daily range.	Mean of min.	MEAN OF				HIGHEST MAX.	Absolute range.	LOWEST MIN.		In inches.	No. of days.
		Mean.	4 hours.	10 hours.	16 hours.		22 hours.	Day.	Night.	Day.				Night.	Day.	Night.							
Fl.	Mean.	4 hours.	10 hours.	16 hours.	22 hours.	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.	Day.	Night.		
Port Blair	218	29.509	...	29.649	29.549	...	100	137.0	82.5	7.7	74.8	...	...	81.5	81.7	...	15th	83.0	11.0	12th	72.0	1.81	...
Madrass	29	29.871	...	29.927	29.816	...	111	...	...	...	...	...	...	79.8	79.1	...	...	...	...	...	...	1.34	...
Aligarh	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	NH	...
False Point	187	30.000	30.002	30.045	29.949	30.003	...	...	...	...	...	...	...	71.3	74.6	70.1	...	...	...	...	...	...	...
Cuttack	80	29.914	29.900	29.979	29.844	29.933	135	...	...	...	...	...	...	70.7	78.5	69.3	...	...	...	...	...	...	...
Sauzer Island	6	29.874	29.888	29.926	29.893	29.869	133	...	...	...	...	...	...	70.8	77.9	69.3	...	...	...	...	...	...	...
Chittagong	108	29.841	29.827	29.878	29.826	29.834	052	...	...	...	...	...	...	74.1	76.6	65.6	...	...	...	...	...	...	...
Calcutta	1811	29.841	29.922	29.918	29.862	29.943	135	111.8	78.0	10.6	58.4	...	...	68.1	76.5	61.6	...	...	...	...	...	...	...
Jessore	15	29.903	29.912	29.983	29.850	29.930	124	127.6	79.7	31.7	48.0	...	...	72.1	77.2	61.4	...	...	...	...	...	...	...
Dacca	35	29.910	29.897	29.971	29.846	29.925	125	...	...	...	...	...	...	71.8	74.8	62.4	...	...	...	...	...	...	...
Cachar	73	29.889	29.886	29.963	29.809	29.897	154	120.0	78.1	...	...	...	...	63.1	65.4	59.1	...	...	...	...	...	...	...
Baracchugh	2014	27.913	27.887	27.972	27.863	27.925	104	129.0	73.0	24.4	49.6	...	...	61.6	67.2	58.0	...	...	...	...	...	...	...
Bombay	80	29.875	29.863	29.951	29.807	29.876	144	129.0	77.6	24.8	53.8	...	...	65.8	71.4	61.4	...	...	...	...	...	...	...
Patna	171	29.797	29.781	29.894	29.739	29.803	125	118.0	74.4	23.8	45.6	...	...	61.8	64.4	54.2	...	...	...	...	...	...	...
Madras	160	29.808	29.800	29.882	29.732	29.810	140	120.0	73.1	24.0	49.1	...	...	63.5	73.3	58.7	...	...	...	...	...	...	...
Darjeeling	836	23.310	23.292	23.345	23.283	23.320	062	...	...	...	...	...	...	43.7	43.3	42.2	...	...	...	...	...	...	...
Gawalpore	386	29.647	29.664	29.730	29.630	29.672	168	76.5	23.2	53.3	53.3	...	...	65.0	65.0	62.9	...	...	...	...	...	...	...
Saltore	425	29.844	29.823	29.877	29.784	29.851	108	127.0	82.4	20.6	41.8	...	...	61.6	67.6	47.8	...	...	...	...	...	...	...
Benares	260	29.759	29.747	29.817	29.711	29.762	106	...	...	...	...	...	...	45.7	47.9	50.0	...	...	...	...	...	...	...
Roostes	880	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

* No correction of index error has been applied to the Benares barometric reading.

CALCUTTA,

HENRY F. BLANFORD,

Meteorological Reporter to the Govt. of Bengal.

The 29th March 1870.

**Abstract of the Results of the Hourly Meteorological Observations taken
at the Surveyor-General's Office, Calcutta, in the month of
February 1870.**

LATITUDE 22° 33' 1" North, Longitude 88° 20' 34" East. Height of the Cistern of the
Standard Barometer above the Sea Level, 18.11 feet.

MONTHLY RESULTS.

	Inches.
Mean height of the Barometer for the month	29.923
Max. height of the Barometer occurred at 10 A.M. on the 23rd	30.110
Min. height of the Barometer occurred at 3 and 4 P.M. on the 5th	29.731
Extreme range of the Barometer during the month	0.379
Mean of the daily Max. Pressures	30.005
Ditto ditto Min. ditto	29.863
Mean daily range of the Barometer during the month	0.142

	°
Mean Dry Bulb Thermometer for the month	74.2
Max. Temperature occurred at 4 P.M. on the 27th	83.2
Min. Temperature occurred at 7 A. M. on the 1st	57.6
Extreme range of the Temperature during the month	30.6
Mean of the daily Max. Temperature	85.1
Ditto ditto Min. ditto	65.3
Mean daily range of the Temperature during the month	19.8

Mean Wet Bulb Thermometer for the month	65.0
Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer	9.2
Computed Mean Dew-point for the month	58.6
Mean Dry Bulb Thermometer above computed mean Dew-point	15.6

	Inches.
Mean Elastic force of Vapour for the month	0.499

	Troy grain.
Mean Weight of Vapour for the month	5.44
Additional Weight of Vapour required for complete saturation	3.65
Mean degree of humidity for the month, complete saturation being unity	0.60

Mean Max. Solar Radiation Thermometer	123.0
---------------------------------------	-------

	Inches.
Rained no day.—Max. fall of rain during 24 hours	Nil.
Total amount of rain during the month	Nil.
Total amount of rain indicated by the gauge attached to the Anemometer during the month	Nil.
Prevailing direction of the Wind	S W & S S W.

The 26th March 1870.

GOPEENAUTH SEN,
In charge of the Observatory.



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, APRIL 6, 1870.

OFFICIAL PAPERS.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT, separately, on payment of six Rupees per annum if delivered in Calcutta, or twelve Rupees if sent by Post.

Proceedings of the Council of the Lieutenant-Governor of Bengal for the purpose of making Laws and Regulations.

Saturday, the 26th March 1870.

Present:

HIS HONOR THE LIEUTENANT-GOVERNOR OF BENGAL, *Presiding.*

J. GRAHAM, Esq., *Acting Advocate-General,*
THE HON'BLE ASHLEY EDEN,
A. MONEY, Esq., C.B.,
A. R. THOMPSON, Esq.,
V. H. SCHALCH, Esq.,
BABOO UNOCOL CHUNDER MOOKERJEE,

BABOO ISSUR CHUNDER GHOSAL,
BABOO CHUNDER MOHUN CHATTERJEE,
T. M. ROBINSON, Esq.,
F. F. WYMAN, Esq.,
AND
BABOO JOTEENDRO MOHUN TAGORE.

NEW MEMBER.

BABOO UNOCOL CHUNDER MOOKERJEE made a solemn declaration of allegiance and that he would faithfully fulfil the duties of his office.

CALCUTTA PORT IMPROVEMENT.

THE HON'BLE ASHLEY EDEN moved that the report of the select committee on the Bill to provide for the maintenance and improvement of the port of Calcutta be further considered in order to the settlement of the clauses of the Bill.

The motion was agreed to.

Section 58 provided that when any wharf, jetty, &c., was completed, the Lieutenant-Governor, by an order, might compel ships to load and unload at such wharf or jetty.

MR. ROBINSON said that there was a point in this section to which he would wish to call the attention of the council. This was the first section which provided for notices being published for the direction of captains and owners of vessels. The section provided that it should be lawful for the Lieutenant-Governor, by an order published in the *Gazette*, to declare that a wharf or jetty is ready, &c. He wished to know whether it would not be better if the notification were issued by the commissioners instead of by the Lieutenant-Governor. It was thoroughly understood that the Lieutenant-Governor was the controlling authority; but it might be difficult to get captains of vessels to recognize the authority of the commissioners when they saw that such notifications were issued by the Lieutenant-Governor instead of the commissioners. He therefore submitted whether "the commissioners" should not be substituted for "the Lieutenant-Governor of Bengal" as the authority by whom the notification should be issued. In the next two sections the same distinction was made; the Lieutenant-Governor being always put forward as the authority to do this or that, instead of the commissioners.

THE HON'BLE ASHLEY EDEN said that there appeared to be no objection to complying with the views of the hon'ble member in this respect to a certain extent. The amendment could be easily effected by the substitution of the words "it shall be lawful for the commissioners with the sanction of the Lieutenant-Governor by a notification" for the expression "the Lieutenant-Governor of Bengal, by an order;" but personally he did not see any great object in the alteration. There must be some sort of control by superior authority. The commissioners must be looked upon as a party specially interested in the welfare of their jetties

and the prosperity of the trust; it seemed necessary that the interests of the public should be protected by restricting the power to declare their wharves open by the additional security of the Lieutenant-Governor's sanction.

MR. ROBINSON having declared his willingness to accept the amendment—

The motion was carried, and the section as amended was agreed to.

Similar amendments were made in Sections 59, 60, and 61.

As to Section 61, MR. ROBINSON observed that he understood that the moorings at the jetties were to be absolutely under the control of the commissioners. He would therefore move the insertion of the word "moorings" after "quays" in line 17.

THE PRESIDENT said, he understood that the moorings would not be under the control of the commissioners, unless and until they were entrusted with the general management of the port. At present the collector of customs, who stood much in the position of the commissioners, had nothing to do with the moorings: they were entirely under the control of the marine department.

THE HON'BLE ASHLEY EDEN explained that there were separate moorings at the jetties, which formed part of the jetties themselves.

THE PRESIDENT said that if that were the case, it would be necessary to include the cost of those moorings in the schedules, as they formed a part of the whole moorings of the port. He believed it had never been intended to include the cost of any moorings in the account to be given in Schedule B. Besides, he understood that the whole of the moorings on the river-bank were connected together by a ground chain.

The motion was then carried, and the section as amended agreed to.

Section 62 provided that if the estimated income of the year should be insufficient for the payment of the sums due to the Secretary of State, the commissioners shall, on the requisition of the Lieutenant-Governor, impose a tonnage rate upon the shipping of the port for the payment of the debt.

MR. ROBINSON said that this clause was the strongest illustration of the difficulties that would be created by establishing two authorities within the port. There appeared to be considerable doubt about the meaning of this section. As the law stood a vessel coming into port had to pay a tonnage rate of four annas a ton, and it seemed that it was now contemplated to put on another tonnage rate, which would be in effect imposing a second port-due. If the Bill remained in its present form, with two separate authorities working in the port, it would in point of fact give power to the commissioners to make every vessel pay a second port-due. The section appeared to be designed entirely to meet any possible financial necessities of the commissioners that Government might impose upon them. It was not that the commissioners were to fix the charge for any work done, but they were to impose a rate because financial necessities required that they should do so. Surely if the duties of the commissioners were confined to the construction of wharves and jetties, and the loading and unloading of ships, the charges that they should be authorized to levy should be confined to services rendered by those works.

If it should so happen that during any year the receipts of the commissioners were found to be insufficient, it seemed to him that the most reasonable course to follow would be for them to use the powers already given them and increase their charges for work done by them. These charges would mainly fall on the cargoes, not on the vessels, and however objectionable, would be more fairly made than an extra port charge on the vessels, imposed for no work at all done directly for them, or from which they could derive immediate advantage.

It might of course be said that the authorities of any port could increase the port charges, and that vessels in transit might find higher rates levied on arrival at their destinations than existed when owners sent them on their voyages; but the very arbitrary form in which this clause empowered Government to increase the charges of this port would be looked upon as most objectionable to its true interests, as the commissioners under this Bill would have no voice whatever in deciding upon the necessity of any such increased charge, and their control over the port would therefore be quite nullified.

He submitted that the section should be omitted: of course if the scope of the Bill were extended, it would be a totally different thing. But as the Bill at present stood, he thought that the section should be omitted.

THE PRESIDENT said that he was sorry he could not agree to meet the views of the hon'ble member. The object of the section was simply to afford an additional security for the expenditure which would be incurred in the works to be undertaken by the commissioners. If the hon'ble member had read the correspondence published in the *Gazette* in connection with this Bill, he would see how very strongly this point was insisted on by the Government of India, and he hardly thought it consistent with his duty to the Government of India to agree to the omission of a clause so urgently pressed on this council by the Government of India. Hon'ble members should remember that the section was intended merely as a security for the repayment of the debt due to the Secretary of State. It was not contemplated—he did not suppose that any body contemplated—that in reality it would ever be brought into operation. With the short experience already had of the working of the jetties, his own opinion was that one of the earliest acts of the commissioners would be to reduce the charges without any risk whatever of not having an income fully sufficient to meet all expenditure. Under these circumstances he hoped the hon'ble member would not press his amendment.

THE HON'BLE ASHLEY EDEN said that he thought that too much importance was attached by the hon'ble gentleman to this section; it was not intended to levy an extra port-due under ordinary circumstances for the improvement of the port, but it was intended to provide some special and double security to Government and to the public that the cost of these improvements should not fall on the general revenues. The natural course in preparing the estimates of the year would be for the commissioners to see what the expenditure would be, and then to fix the tolls and charges accordingly. The intention of the section was to provide for the imposition of a supplemental general rate on shipping in case of a miscalculation of the receipts or expenditure, so as to prevent any chance of a deficit which would have to be met by a grant from the imperial revenues. Obviously such a contingency was never likely to arise except under very extraordinary circumstances.

MR. ROBINSON said he was quite aware that this section was very much pressed by the Government of India, but at the same time he really thought that it was a very great pity that this Council should put forward a Bill bearing such a section, and he was sure that it would be looked on by all men of business as most unreasonable and unjust. He would only beg further to remark that the reason why he objected to this clause so very strongly was, that the persons who were affected by it were not resident in Calcutta, but the ship-owners who were at a distance. In England especially they would say that they already paid a heavy port-due (the heaviest he believed levied for entering any port of importance in the world) which they were prepared for, and then without any previous intimation, instead of having only four annas a ton to pay, they might find themselves charged with another port-due, not for any appliances provided for their convenience, or services rendered to the shipping, but simply an additional port-due to meet the payments due to the Secretary of State by this proposed commission, and not even as the act of the commissioners, but forced upon them by the simple will of the Government. He (Mr. Robinson) did not wish to press the matter to a division, in which he was sure to be defeated; but he did wish most strongly to record his opinion that it was not a proper course to be taken with regard to the interests of the ship-owners, and that if the clause was left in the Bill, the Council would be looked upon by the commercial world as having imposed an entirely new and very unfair burden upon the trade of this port, making it more unpopular with ship-owners than it was at present, by introducing an element of uncertainty into the expenses of vessels than which nothing was more objectionable to shipping interests.

MR. WYMAN said that if there was any probability of the section being carried into effect, he should certainly object to its retention in the Bill. But he agreed with His Honor, the President, that as far as experience had shewn, there was a probability of there being a reduction of the present charges. Still the course was open to the objection taken by the hon'ble member opposite (Mr. Robinson) that it gave power to levy a second port-due by a body who did nothing to entitle them to raise the due. And he (Mr. Wyman) only hoped that if, in deference to the authority of the Government of India, the section was allowed to stand, it would not be put in force. He simply wished to mention his agreement with the objection raised, and although the Council might agree to leave the clause in the Bill, he repeated that he hoped that there never would be occasion to put it in force, as he was sure its operation would give great dissatisfaction to the whole shipping of the port.

MR. ROBINSON said that he would offer another suggestion with reference to this clause; he really did feel it so objectionable that he would propose that the further consideration of the section be postponed.

The further consideration of the section, and of section 63, was then postponed.

Section 64 was agreed to.

Section 65 was agreed to after an unimportant amendment made on the motion of Mr. EDEN.

Section 66 was agreed to.

Section 67 provided that on the production of a document purporting to be a receipt for the amount claimed as due, or a release for freight, the commissioners might deliver the goods provided they used reasonable care in respect to the authenticity of the document.

MR. ROBINSON said that under this section a question would appear to arise as to the extent to which the commissioners should be responsible for their acts. Perhaps the case would not be precisely the same as that of a banker parting with funds deposited with him; but it appeared to be precisely the same as the case of a warehouse-keeper or wharfinger. Take the case of the Bonded Warehouse Association. If a person deposited his goods at the bonded warehouse, and they were taken away from the warehouse by means of a fraudulent signature, the Association would be liable to damages. The section said that on the production of a "document purporting to be a receipt," it would be lawful for the commissioners to deliver the goods, and that would appear to guard the commissioners from all liability. It seemed an extreme case to suppose that a person by merely looking at a signature would be able to decide its authenticity. It struck him that the business limits of Calcutta were so small, that without inconvenience a rule might be made requiring signatures to be verified; but as the clause stood now, the public had not the protection they ought to have that due care would be exercised by the commissioners before delivering goods.

THE HON'BLE ASHLEY EDEN said that he could not agree with the hon'ble gentleman that a public body such as this corporation was in the same position as a private wharfinger. He

did not see that there was in the section any absence of protection of the interests of the public, because it was made a special proviso that the liability of the commissioners would only cease if they had taken reasonable and due precautions to prevent fraud. In every case they would have to prove that they had taken such due precautions and, when due precautions were taken, it seemed to him all that was necessary. He would not bind the commissioners, as proposed, to adopt any special mode of verification of the signatures to certificates of release: no doubt they would in all cases of doubt adopt the course of verification suggested by the hon'ble member, but that was a matter for their consideration, they being bound to show that they had adopted every reasonable means of satisfying themselves. He thought that if they were hampered too much, there would be very great delay in the delivery of goods, and the loss to the general public would be greater if we imposed all these restrictions in every case, than it would be under the exceptional cases of loss which might occur by making the process summary.

THE ACTING ADVOCATE-GENERAL said that the hon'ble member who had just spoken had anticipated a good many of the remarks he (the Advocate-General) was about to make. The provision as it stood was reasonable, having regard to the ordinary course of business. Objections had been raised that the commissioners should be bound to obtain a verification of signatures. In reply to that he would observe that if reasonable care was not exercised, the commissioners would be liable; but if they exercised reasonable care, it seemed only just that they should be protected. As regards the measure of reasonable care, it would be for the courts to determine it in the same manner as all other questions of fact; probably the first step would be to ascertain if proper verification of signatures had been obtained. In the case of large mercantile houses, that would perhaps be a sufficient precaution; but with regard to other persons, comparatively unknown, there might be a false verification of a forged signature, and it would be very unreasonable if the commissioners should suffer on that account. The words regarding reasonable care were not to be found in other cognate Acts, but he (the Advocate-General) thought it was a favorable opportunity for introducing words of that kind.

MR. ROBINSON said that, after the explanation given by the learned Advocate-General, he would withdraw his objection to the section passing as it stood. He would only beg to suggest that it would be very desirable that the bye-laws should provide as distinctly as possible for some course in performing this part of their duties to be followed by the commissioners—neglect of which would shew that reasonable care had not been exercised by them in parting with goods. He knew that inconvenience had been felt from the want of any prescribed procedure in this respect. The French steamers and others, for instance, brought out a very large number of small parcels, and practically the agents were subjected to great trouble in finding the persons to whom they ought to be delivered.

The section was then agreed to.

Section 68 provided that if tolls were not paid, or the lien for freight was not discharged, the goods might be sold after the expiration of two months, notice being given to the owner of the goods by letter sent by post.

MR. WYMAN said that this section provided for the issue of notice on the Calcutta agent, and service by post on the consignee, where his address might be known; and declared that the title of the purchaser of the goods should not be invalidated by reason of any omission to send the notice. This he (Mr. Wyman) thought might be fair enough as regards the purchaser; but it seemed necessary also that the owner of the goods should be protected from loss occasioned by any neglect or omission to send notice by post. It might be urged that the inference naturally was, that, if the commissioners failed to advertise or send notice by post, they would be liable; but he thought it would simplify matters if it were provided that the commissioners should be liable to the owner if they omitted to give due notice: the purchaser would then be protected in his title, and the owner would be protected from loss occasioned by the neglect of the commissioners. He therefore moved the addition to the section of the following proviso:—

"Provided that the owner of such goods shall be entitled to claim compensation according to the invoice value of the goods, should such notice as aforesaid have been omitted to be advertised or sent by post in cases where the address of the consignee is known."

THE ACTING ADVOCATE GENERAL said he understood the effect of the amendment to be that compensation should be given if the goods were sold without proper notice. It seemed to him unnecessary to make a provision of that sort, because the commissioners would be liable in law if they proceeded to sell the goods in an unlawful manner. It seemed contrary to the course of legislation to provide for cases of this sort. It was enough to say what the law was, and for any breach of the law there would be its proper remedy. There was a further objection, as regards the measure of damages, to the proposal that the invoice value should in all cases be the value of the goods, because the owner ought in all cases to prove the value of the goods, and there was no reason to provide that the invoice sent, which might be excessive, should be taken to be the value of the goods. Therefore it appeared to him (the Advocate-General) that there were no grounds whatever for the amendment.

MR. WYMAN said that he had already stated that the inference undoubtedly was that the commissioners would be liable for neglect or omission to give due notice; but it occurred to him that the provision was likely to give rise to many disputes, particularly as to the sending of notices by post, and that there would be a constant succession of law-suits, which it would

be desirable to avoid. It was for that reason that he proposed the addition of the proviso, although he knew it was out of the usual course.

THE HON'BLE ASHLEY EDEN said that he agreed with the learned Advocate-General. We have provided that a certain course should be followed under certain circumstances, and if the commissioners failed to act according to those provisions, they were of course liable; and he did not see that any possible benefit could be derived by the introduction of the proviso proposed, which would neither increase or decrease their liability for failure to comply with the law. He could not see that the amendment did in any way simplify the matter in regard to the amount of proof that was necessary of the posting of the notice, and that really was the only point on which there could possibly be any dispute; the case could turn only on the question whether or no the notice had been posted, and this the commissioners were bound to prove under any circumstances.

MR. ROBINSON said that it appeared to him that the clause was rather more forcible as it stood: it imposed an absolute duty on the commissioners, and there was no necessity therefore of stating the consequences if the duty was not performed.

MR. WYMAN said that as the sense of the council was against him, he would not press the amendment.

The section was then agreed to after a verbal amendment.

Section 69 provided how the proceeds of sale should be applied.

MR. WYMAN said that the concluding portion of this section enacted that if the surplus proceeds were not claimed within one year, they should be carried to the credit of the trust fund. He could not see why, after the lapse of so short a period as a year, the owner should lose what was due to him. There might be cases in which there might be a want of knowledge on the part of a person that money belonging to him was in the hands of the commissioners, or the owner might be absent from the country for more than a year, and it would be very unjust that in such cases he should lose his property. He (Mr. Wyman) thought that the limit of one year was far too little. The money, it should be remembered, was absolutely the property of the owner, and he should be entitled to receive it, if not at any time, at any rate within an extended time. Three years should be the lowest limit that should be allowed, and he accordingly moved an amendment to that effect.

MR. ROBINSON said that he would support the amendment. The period of one year might be sufficient in the case of parties in this country who were well known; but difficulties very often arose as to any one in this country having authority to act for parties absent in England or elsewhere, and more so in the case of such authority being required to act for the estate of a party deceased: he had known many cases in which much more than one year was required before proper powers could be obtained to deal with the property of parties who died in India. He thought that the time required very considerable extension.

THE ACTING ADVOCATE-GENERAL said that the hon'ble member who spoke last had instanced the case of a person who was out of the country during the time the year elapsed; but the hon'ble member should remember that the law was not made for exceptional but for general cases. In the Customs' Act the time allowed was one year; and inasmuch as one year was the time fixed for the demand of the surplus proceeds of sale under the Customs' Act, it seemed only reasonable that the same term should be adopted in the present case.

MR. WYMAN said that it did not follow that because the term of one year was fixed under the Customs' Act, subsequent experience had not proved the mistake: the fact of a law being passed afforded no reason why it should not be altered. He thought that the retention of the provision would entail hardship on owners. He would, with all deference, press the amendment.

THE PRESIDENT said, at the same time that it seemed to him a fair point for consideration that the provision which was objected to stood in the Customs' Act—and he believed it to be taken from the much older provisions taken from the older customs' laws—he would ask whether any hon'ble member had heard of any case in which hardship had occurred under that provision. If not, then he saw no reason why the time should be extended.

MR. WYMAN said that he was not aware of the limitation of one year in the Customs' Act having caused any hardship, but still he thought that hardship might occur, and the council should provide against the possibility of any hardship occurring.

THE HON'BLE ASHLEY EDEN said that the Customs' Act was passed on the report of a mixed committee, in which the mercantile community was strongly represented, and he thought the period of limitation there adopted should be retained. It would be very strange if in two Acts of the same nature the period of limitation as to the unclaimed surplus proceeds of sales should be one year in one, and three years in another.

THE PRESIDENT said he would also remark that cases of special hardship that might occur would really be met by the saving clause as to good reason being shewn why the application had not been made within the time allowed.

MR. WYMAN'S amendment was then put and negatived, and the section was agreed to.

Section 70 related to the distraining of vessels for the non-payment of tolls.

MR. ROBINSON asked whether there was any necessity for referring the commissioners to the collector of customs for the distraint of vessels; it appeared inconsistent with the other provisions of the Bill. It would appear by this that the commissioners had no authority to do any necessary act for their own protection; and he thought that if they had power to call on the collector of customs to distrain vessels, it would be more consistent with their position to give the commissioners the power to distrain.

THE PRESIDENT said that he did not see anything in the section inconsistent with the position of the commissioners. The section made it compulsory on the collector of customs to distrain when called on by the commissioners so to do. The procedure was taken from the Port Act XXII. of 1855, Section 49, where the intervention of the collector was used for distraining vessels for port-dues.

THE HON'BLE ASHLEY EDEN remarked that no ship, even if it left the port, could leave the river without the permission of the collector of customs, who alone had the authority to refuse port clearance.

The section was then agreed to.

Section 71 was agreed to.

Section 72 related to compensation for damage to the property of the commissioners.

MR. WYMAN said that the section provided that if any damage was done to the works of the commissioners to an amount not exceeding two hundred rupees, the amount might be recovered by distress and sale of the tackle, &c., of the vessel causing the damage; but the section further provided that if the vessel was in charge of an officer of Government, it should not be liable. He should like to know whether it was meant that, in that case, the commissioners had no claim against the Secretary of State for India. If damage was done to the property of the commissioners through the default or negligence of an officer of Government, it was only fair that compensation should be made by the Secretary of State. Damage caused by a vessel while in charge of a pilot or harbour master would be far less excusable, than when the vessel was not in such charge. It was quite possible that such damages might occur. He should like to be informed, before moving any amendment in the matter, whether the section did mean that no compensation could be claimed in such a case.

THE ACTING ADVOCATE GENERAL said he thought that there was misapprehension as to the meaning of this section. The only object of the proviso was to meet the case where a vessel was in charge of a pilot or harbour master: in that case the master of the vessel was exempt from responsibility. If the master of the vessel was not in charge he was exempt from the payment of damages. The hon'ble member seemed to consider that this was a proviso in the interests of the Secretary of State and the Government; whereas it was in the interest of vessels under charge of a harbour master or pilot. The general law was that the master or owner could not be held liable for damages caused from the navigation of a ship whilst in charge of a pilot or harbour master, and this section only provided that in regard to summary proceedings before a magistrate, cases when the ship was not in charge of an officer for whom the owner was responsible should not be entertained.

THE PRESIDENT said he thought the hon'ble member must have overlooked the fact that the section merely provided a summary remedy for damages against vessels. Surely if a vessel was in charge of an officer of the pilot service or of the harbour master's department, the vessel should not be held responsible. He (the President) apprehended that if damage was caused by negligence of one of the harbour master's or master attendant's department, it would be a question whether the general law rendered the Government civilly liable or not. If the hon'ble member meant to raise that question, and to propose that it should be so specially provided, he might do so; but that question did not arise under the present section.

MR. WYMAN said that he was merely seeking information. He now perceived that the section only applied to damages against the vessel. Perhaps he might propose some clause hereafter.

MR. ROBINSON said he observed that the section provided that the summons might be issued against the master or agent of the vessel. He suggested that "agent" might be a mistake for "owner," as he did not see what the agent had to do in the matter.

THE PRESIDENT said the only object of summoning the agent could be to do so in the interests of the owner, in order to give the agent the opportunity of affording any explanation the matter was capable of. It was perfectly open to the agent to attend or not. It was reasonable to give the agent notice to enable him to come forward and make such answers as he thought fit: the section did not make the agent liable in any way.

MR. WYMAN said it was naturally the interest of the agent to see that the owner was justly dealt with. He thought the section a very proper one, and the agent should be very glad to attend during investigation of the case in the interests of the owner and in his own interest.

The section was then agreed to.

Section 73 provided a penalty for wilful damage done to the works or property of the commissioners.

MR. SCHALCH moved that the section be omitted. It appeared to him that the definition of mischief in the Penal Code was so wide that there was scarcely any act of the kind that would not fall within its scope. The definition of mischief under the code was—

"Whoever, with intent to cause, or knowing that he is likely to cause, wrongful loss or damage to the public or to any person, causes the destruction of any property, or any such change in any property, or in the situation thereof as destroys or diminishes its value or utility or affects it injuriously, commits 'mischief.'"

Explanation I.—It is not essential to the offence of mischief that the offender should intend to cause loss or damage to the owner of the property injured or destroyed. It is sufficient if he intends to cause, or knows that he is likely to cause, wrongful loss or damage to any person by injuring any property, whether it belongs to that person or not."

THE HON'BLE ASHLEY EDEN said he had no strong opinion about the section, but he was quite sure that it would not have been framed if it was not thought necessary to provide for cases beyond the definition of mischief under the Penal Code. The master of a vessel having a rope in his way might, out of irritation, do an act damaging the commissioners' property without intending to cause mischief. It seemed to him impossible that this section could have been framed without some necessity having arisen for such a provision.

MR. WYMAN said he thought there was an advantage in retaining the section, although the provision in the Penal Code might embrace all that was necessary: it was quite possible that the Penal Code might afford a loop-hole for escape; and therefore if this section would give an additional security that damage wilfully caused would be punished, it ought to be retained.

BABOO ISSUR CHUNDER GHOSAL said he would support the motion for the omission of the section, because the provision on this subject in the Penal Code was sufficient. If this section were retained, it would afford a handle for the manufacture of new charges, and would be used as a means of oppression.

THE ACTING ADVOCATE-GENERAL said he confessed he could scarcely conceive any class of cases to which the provision against mischief would not apply: the words in the Penal Code were sufficiently wide to embrace all the offences included in this section. The hon'ble member opposite had suggested the case of a master, out of irritation, cutting a rope that was in his way; but that was a very far-fetched instance, and he (the Advocate-General) thought there was hardly any necessity to multiply offences.

MR. SCHALCH's motion was then carried, and the section omitted.

Section 74 provided a penalty of 10 Rs. for the offence of throwing rubbish on the river bank within the port.

MR. WYMAN thought the penalty was too small. It might happen that the cost of removing the rubbish may cost more than the penalty imposed. He would move that the penalty should be raised to 50 Rs.: he thought that any person who wilfully deposited rubbish on the strand bank should be severely punished.

MR. SCHALCH pointed out that the penalty imposed by this section was the same as that leviable by the Justices for the same offence committed in reference to the streets of the town: he thought that it would be well to keep the same fine for the same offence.

MR. ROBINSON did not see the force of the principle of uniformity now quoted for the second time. It might be both convenient and economical for a person to deposit rubbish on the river bank and suffer a penalty of 10 Rs.

The council then divided on Mr. Wyman's motion:—

AYES—4.

Mr. Wyman.
" Robinson.
Baboo Unsool Chunder Mookerjee.
The President.

NOES—8.

Baboo Jotendro Mohun Tagore.
" Chunder Mohun Chatterjee.
" Issur Chunder Ghosal.
Mr. Schalch.
" Thompson.
" Money.
The Hon'ble Ashley Eden.
The Acting Advocate-General.

The motion was therefore negatived, and the section agreed to.

Sections 75, 76, and 77 were agreed to.

The form of Section 78 was considerably altered on the motion of Mr. EDEN, and Section 79 was omitted as unnecessary.

Sections 80 and 81 were agreed to.

Section 82 empowered the Lieutenant-Governor to revoke and annul any bye-law made under the provisions of the Act.

MR. WYMAN said that there was the same objection to this section that there was to the section, which had been struck out of the Bill, empowering the Lieutenant-Governor to direct the commissioners to record a resolution passed by him. It could hardly be supposed that if a collision of opinion took place between the commissioners and the Lieutenant-Governor, and the Lieutenant-Governor annulled the acts of the commissioners, they would consent to continue to be commissioners any longer. It was, no doubt, very unlikely that the commissioners would set themselves up against the Lieutenant-Governor; but if the commissioners unanimously came to a conclusion contrary to the views of the Lieutenant-Governor, and their opinion should have small weight with His Honor, it would bring about such an unsatisfactory state of things that it would render it impossible to carry on the future working of the Act: it would necessarily involve the resignation of the commissioners, and the result would be that a compromise would necessarily have to be effected, instead of there arising, as appeared to be contemplated in this section, a state of defiance between the Lieutenant-Governor and the commissioners. He (Mr. Wyman) thought that the occurrence of such a state of things should not be assumed, for no independent gentleman of position would consent to serve under such circumstances. If a conflict of opinion took place, there was no doubt that one or other of the parties would give way, but if not, the result would be the resignation of the commissioners. He would urge most strongly that this section should be omitted as serving no interest whatever. The state of things contemplated could hardly arise, and if it did arise would result in the resignation of the commissioners: he therefore thought it was a very objectionable clause.

THE HON'BLE ASHLEY EDEN said he was unable to agree that there was any sort of resemblance between this section and the section struck out. This was a section which gave the Government power to revoke and annul bye-laws which could only be made, and indeed which only became bye-laws, on the sanction of the Lieutenant-Governor being obtained. No other but the authority which sanctioned bye-laws could have the power to revoke them, and the practical result of the hon'ble gentleman's proposal would be that a bye-law once passed would have to remain in force for ever, however much the public, the commissioners, and the Government might object to it on seeing its practical working. The mover of the amendment seemed to forget that these bye-laws had the force of law, and when a law was once passed surely the authority to alter it should be the authority who passed it. The commissioners could not be allowed to undo what Government had done, and as some one must have that power, if the bye-laws were not to be immutable, whom could it be bestowed upon except the Lieutenant-Governor? The course followed in this case was no new principle: the council had frequently legislated to a precisely similar effect in respect of municipalities and other bodies who were empowered to make bye-laws subject to the sanction of the Lieutenant-Governor. It gave the Lieutenant-Governor no power practically of thwarting the commissioners which he did not possess before, for if he disagreed with them he had only to decline to sanction any bye-law, and it would fall to the ground. If he had this power in the initial stage, why should he not have it also at a later stage when desirous of acting on the experience of the working of a bye-law.

In the other section which the hon'ble gentleman had quoted as analogous to this, and which had been very properly struck out in select committee, he could see no sort of resemblance to the principle of this section. There the Lieutenant-Governor was vested with authority to frame a resolution and send it to the commissioners, who were then bound to accept it as their resolution and bring it on record as such, however much they might object to it.

MR. WYMAN said it would be apparent from the nature of his remarks that he viewed the matter in a different light. But if it was possible to interpret the section differently, and if the intention was not that the Lieutenant-Governor should have the power to override the acts of the commissioners, the intention should be expressed more plainly. But he thought that the clause as it stood was open to a different interpretation from that sought to be put on it by the hon'ble member, and he would suggest the desirability of its terms being so altered as to prevent the possibility of any misinterpretation of its scope and intention.

MR. ROBINSON said that he thought a very trifling alteration would make the section satisfactory. The present wording of the clause certainly made it very objectionable. It was perfectly clear that none but the authority passing bye-laws should have power to annul them. He thought that the section should show that the intention was not to leave entirely with the Lieutenant-Governor the power of annulling bye-laws, which had been passed by the commissioners with the sanction of the Lieutenant-Governor, and this could easily be done by saying that the Lieutenant-Governor, on the recommendation of the commissioners, might revoke, &c. If this alteration were not made he thought that the section should be omitted as quite unnecessary. The two previous sections provided for the preparation and putting into force of bye-laws by the Lieutenant-Governor and the commissioners conjointly, and he could see no reason why any special powers should be given to either authority to undo the work of both. Clause 79, gave a power to the commissioners to vary, alter, or revoke bye-laws, and Clause 80 pointed out how the acts of the commissioners were to be made legal by the Lieutenant-Governor: he could not see why it was not sufficient to leave them to be revoked by the same process. If a bye-law proved to be useless or inexpedient, there could be no reason to doubt that the commissioners would be as ready to revoke it as the Government.

THE PRESIDENT said that he could not agree with the objection taken by the hon'ble member. It was perfectly true that it was very unlikely that the alteration of a bye-law would take place without the consent of the commissioners; but that there should remain in the hands of the Lieutenant-Governor some such power as was provided in the section under consideration seemed unquestionable. It should be recollected that the commissioners would only represent one special set of interests, and that the Government would stand between the commissioners and the public whom the bye-laws made by the commissioners might in some respects very seriously affect. And in this and other respects power was given to the Lieutenant-Governor in the interests of the general public. In all probability no occasion to exercise such a power in opposition to the commissioners would arise once in ten years; but still such a power ought to exist in the hands of the Government.

MR. WYMAN said that the remarks which His Honor the President had made seemed to lead to the inference that the view taken by the hon'ble member in charge of the Bill was not the correct one. The President's remarks showed that the objection which he (Mr. Wyman) had taken that the section would enable the Lieutenant-Governor, if he thought fit so to do, to override the acts of the commissioners, had some foundation. It would be very unpalatable to the commissioners, if they knew that the Lieutenant-Governor had the power to override the united opinion of their body; and with all deference he thought that the section might be altered without derogation to the authority and rights of the Lieutenant-Governor. It was certainly very unlikely that the Lieutenant-Governor would annul a bye-law of the commissioners without consulting them. [The President.—very unlikely indeed.] Still he thought that it should be made obligatory that the commissioners should be consulted

as to any alteration or revocation of a bye-law passed by them. He had no doubt that the revocation of a bye-law would only be resorted to when it was for the public good; but as the section stood now it certainly grated unpleasantly on the ear.

The PRESIDENT said the effect of the alteration suggested was that a bye-law once made could not be altered without the consent of the commissioners. If such was to be the law, it would be exceedingly absurd to pass the section just gone before; because if the Lieutenant-Governor was not to have the power to annul a bye-law once made, why should he have the power to refuse assent to a bye-law proposed. It would be just as consistent to give the commissioners the absolute power to make bye-laws. When the legislature was setting up in a body one set of interests, to give them the power to make bye-laws without the Government on behalf of the public having an overruling power, was out of the question. Therefore he could not for a moment consent to any alteration such as that which had been suggested.

He had no objection, however, to postpone the further consideration of the section, if the hon'ble member on the left (Mr. Wyman) desired it.

MR. WYMAN having acquiesced in the desirability of a postponement—

The further consideration of the section and of the Bill was postponed.

The council was adjourned to Saturday, the 9th April.

Survey of the Mutlah River.

From CAPTAIN H. HOWE, Officiating Master Attendant, to the Secretary to the Government of Bengal, General Department,—(No. 1690, dated Fort William, the 25th March 1870.)

IN continuation of my letter No. 796, dated the 11th ultimo, I have the honor to submit, for the information of His Honor the Lieutenant-Governor, a copy of the report of the assistant river surveyor, concerning his recent survey of the Mutlah and of Port Canning, together with the remarks on the same by the conservator of the port.

2. The attention of the conservator has been called to the several points brought to notice by Mr. Pearson, and he has been directed to adopt measures for placing the additional marks required.

3. The patch formed in the western or Bulcherry channel, the closing of the south channel of the Catallee reach, and the forming of a spit of sand in the reach immediately above it, together with the deterioration in the Nalpooker and Hoojleedee reaches, are the most material changes reported; but there is nothing to affect the safe navigation of the river, if care and attention are observed.

4. The bar off Canning has only 12 feet 6 inches on it at low water, and the Bidyadhuree is reported upon in very unfavorable terms, but I am informed by the conservator that ships experience no extraordinary difficulty in going in or out of the river to the rice mills; of course care is necessary, and the proper time of tide must be taken to avoid the rush of tide and the eddies, and this being the case I see no reason for the Biddyadhuree being closed, as suggested by Mr. Pearson.

Report on the Channels leading into Port Canning. Examined February 1870.

Western or Bulcherry Channel.—A patch with only 18 feet reduced on it has formed between the spit and the U. C. B. buoys, with the L. M. G. buoy bearing north (magnetic). By keeping well over to the westward of the line L. M. G. buoy N $\frac{1}{2}$ E., a vessel will avoid this patch and be in good water. I found no other material change in this channel.

Eastern or Bangdooney Channel.—No material alteration has taken place in this channel since it was last surveyed. The buoys in both the above channels are in position and in good order.

The shoal patch (shewn on the last chart) lying between Halliday's Island and Dalhousie Point.—This shoal has become extremely dangerous since it was last surveyed. With Grant's Point north (magnetic), Halliday's Island beacon W. $\frac{1}{2}$ S., and Dalhousie Point beacon E. S. E., there is a lump with only 9 feet reduced on it. A black and white buoy here is absolutely necessary, as Grant's Point (the only leading mark) may not always be visible.

Peel's ridge and Grappler's sand.—Are both much about the same as when last surveyed.

The next change (one for the better) is the shoal shewn in the last survey to S. E. of Point Rodgers. This shoal does not exist now, and the buoy that used to mark its eastern edge has been removed.

The Catallee.—The western gut of this reach must be closed, as it is no longer practicable for even a small vessel, in consequence of the narrowness, the depth, and the mass of eddies. The eastern gut continues the same as when last surveyed. The tail of the sand, however, which divides the two guts has stretched down about half a mile further south than shewn in the last chart.

The next change, and a very material one for the worse, is in the reach immediately above the Catallee. This is in the shape of a spit nearly dry at low water, which has formed below the buoy and stretches out considerably into the channel, leaving barely room for even a small vessel to work through with safety. It is very steep to (6 and 7 fathoms close to it). A nun buoy may, with advantage, be laid on the western edge of it.

Naepookra or Middle Point Reach.—This reach has likewise deteriorated considerably. The sand which is now dry at half tide between the upper and lower buoy has encroached very much into the channel, leaving it abreast of *Double Creek*, (and in fact all along from buoy to buoy) barely 200 yards wide. The sand is very steep too, having 7 and 8 fathoms within 50 feet of the dry sand. A nun buoy is absolutely necessary; for the channel and sand take a deep curve here (abreast of *Double Creek*), and the buoys at present on the edge of the sand are too far apart to be of any use.

Hoojleedee Reach.—Hoojleedee flat has encroached considerably into the channel, and there is a patch midway between the two buoys and on the edge of the flat, which is dry at half tide.

Edoo Reach.—The next alterations is in Edoo Reach, where a dangerous flat with only 2½ fathoms reduced on it and 6 to 7 fathoms close alongside has run out into mid-channel from off the point facing Hoojleedee river. A nun buoy should be laid on the edge of this flat, or marks put up at A. and B.—*vide* accompanying tracing.

Hedya Harra Reach.—The ridge in this reach has deteriorated considerably since last survey, although its position remains unaltered. It has now only 15 feet reduced on it.

N. B.—All the buoys inside the river require to be overhauled.

The bar off Canning has only 12 feet 6 inches reduced on it in the best track, which is No. 5 jetty (reckoning from below) on with the turret of the magistrate's cutcherry. The shoal off the point abreast of the old railway pier has likewise deteriorated since last surveyed. The black buoy now lies in 7 feet reduced, instead of 18 as shewn in the latest chart.

The Biddyadhuree is, without exception, the worst place in the whole river, and I cannot but condemn it as a place for ships to go to. It is full of eddies with from 10 to 15 fathoms of water, and a steep shoal rising suddenly like a wall. It is very narrow: in one part of what may be called the channel, it is barely 150 feet wide. As there is ample room for at least twenty ships to load below Canning Bar, with five commodious jetties and sets of moorings, I consider it a useless and unjustifiable risk to go into this river, and would therefore recommend its being closed—especially as it can accommodate but two ships.

(Sd.) E. J. W. PEARSON,
Marine Surveyor.

ASST. R. S. V. MARIE ; }
Off Diamond Harbour,
The 11th March 1870.

From W. J. C. BERESFORD, Esq., Officiating Conservator of Port Canning, to CAPTAIN H. HOWE, Officiating Master Attendant,—(No. 70, dated Canning, the 23rd March 1870.)

WITH reference to the report from Captain Pearson, assistant river surveyor, forwarded with your memorandum No. 1484 of the 15th instant, I beg to make the following remarks.

2. The patch formed in the Bulcherry channel between the spit and U. C. B. buoys is probably caused by the late ship *Essex*. This vessel foundered in this position on the 29th day of August 1863, and nothing whatever was done to remove the wreck. There is a very good channel between the patch and Bulcherry sand.

3. The eastern channel is a safe and wide channel, and much the best for working out in the south-west monsoon.

4. The shoal patch off Halliday's Island is apparently growing up, but there is a good channel between it and the island. Last cold season 12 feet reduced was found on this patch.

5. The south channel Catallee has been closed. And since the ship *Pleiades* grounded in it in April 1865, it has only been used by small vessels and inland steamers.

6. The flat in Edoo Reach apparently has not altered since 1863.

7. *The Hedya Harra Reach.*—On this ridge in May 1868, I found only 17 feet reduced, and it will probably deepen again when the southerly winds set in.

8. The buoys and marks above Halliday's Island will be overhauled and shifted when required, on the return of the buoy-vessel *Dolphin* from the outer light station.

Notice of the opening of the first reach of the Taldunda Canal, from Cuttack to Bereebhatee.

From J. P. H. WALKER, Esq., Superintending Engineer, Orissa Circle, to COLONEL F. H. RUNDALL, R.E., Joint-Secretary to the Government of Bengal, Public Works Department, Irrigation Branch,—(No. 489, dated Cuttack, the 14th March 1870.)

I HAVE the honor to inform you that the first reach of the Taldunda Canal, *viz.*, from Cuttack to Bereebhatee, was filled with water on the 2nd ultimo. The channel was filled very gradually from the head sluices at Jobra, so that the water in the canal did not attain the level of the water in the River Mahanuddy till the 7th of February. Gauges were placed at the head sluice, and at the 3rd, 5th, and 7th miles, from which the comparative rise of water in the canal at these different points under an increasing sectional area and diminution of head were obtained. Only one shutter of the head sluices was opened to feed the canal; the width of

the opening being 6 feet, and the height to which the shutter was lifted, 3 feet. The floor of the head sluice is 60.50 above mean sea datum, and the level of the water in the river at the time being 65.10, the mean pressure when the water commenced to flow was 3.10 feet.

The first reach of the Taldunda Canal takes off from the right bank of the River Mahanuddy, just above the anicut across the river. The entrance to the head lock is situated 980 feet above the anicut, while the head sluices abut on the south end of this work. After leaving Jobra the canal skirts for $1\frac{1}{2}$ miles the east side of the town of Cuttack. It then curves round to the eastward, and for four miles runs nearly midway between the rivers Mahanuddy and Katjoree. From the $5\frac{1}{2}$ to 7th mile it runs nearly parallel to the former river, at a distance of from half to one mile. At the 7th mile, *viz.*, at Bereebhatee, the Machgong branch takes off one-half the volume supplied by the reach now open. Between Jobra and Bereebhatee the canal has a bottom width of 64 feet, with inner slopes of 2 to 1. The bed has an inclination of 6 inches in a mile. Thus the discharge when there is a depth of seven feet of water in the canal is calculated to be 1,230 cubic feet per second. At Bereebhatee one-half of the above volume will be taken off by the Taldunda Canal and the other half by the Machgong Branch.

The bridge over the head sluices is now complete, and a good roadway connects the workshop with the Lower Ferry and Pilgrim Road. The head lock has been completed nearly to coping level. The ring bund in front of the entrance has been cleared away to water level, and a gap cut of sufficient width and depth to admit laden iron boats. When the river is lowered in the month of May, the remains of the bund will be removed, and the gates now being put together in the Jobra workshop will be hung in place. Two bridges, each of three openings, span the canal within the first two miles. The openings consist of one thirty, and two side spans of twenty-five feet each. The bridges are built entirely of laterite, and present a very substantial appearance. In order to create a current in the canal to keep the water from stagnating, and weeds from springing up, a small temporary escape, formed of blocks of laterite, is being constructed at the 6th mile; the water will pass off into the Cuttack drainage channel, which near this point enters the river Katjoree.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY MAIN LINE.

Approximate Return of Traffic for Week ended 20th March 1870 on 1,131 miles open.

	COACHING TRAFFIC.				MERCHANDISE AND MINERAL TRAFFIC.				Total Traffic Receipts.
	Number of Passengers.	Coaching Receipts.			Weight carried.	Receipts.			
		Rs. As. P.	£ s. d.		Mds. Srs.	Rs. As. P.	£ s. d.		£ s. d.
Total Traffic for the week ...	1,03,793½	*1,70,210 13 5	15,802 13 2		7,72,601 10	†3,94,687 5 6	36,179 13 5		51,782 6 7
Or per mile of Railway ...	.....	150 7 11	13 15 11		.....	348 15 7	31 19 9		45 15 8
For previous 10 weeks of half-year	12,15,151½	22,46,719 6 9	2,05,949 5 9		72,53,513 0	42,84,711 10 6	3,92,765 4 8		5,98,714 10 5
Total for 11 weeks ...	13,18,945	24,16,939 4 2	2,21,551 18 11		80,26,504 10	46,79,399 0 0	4,28,044 18 1		6,50,496 17 0
COMPARISON.									
Total for corresponding week of previous year ...	1,06,165	1,78,910 9 1	16,400 2 9		9,42,407 0	4,63,657 11 3	42,501 19 1		58,962 1 10
Per mile of Railway corresponding week of previous year ...	.....	158 3 0	14 10 0		.....	409 15 3	37 11 7		52 1 7
Total to corresponding date of previous year ...	11,66,434	19,56,889 15 4½	1,70,391 11 8		87,67,654 20	48,34,226 15 0	4,48,137 9 3		6,22,519 0 11

* Rs. 15,816-3-11 added on account of special and extra troops trains run on 9th, 10th, and 11th instant, and proportion of missing returns from Jubbulpore station in last week.

† Rs. 4,156-1-6 added on account of freight of locomotive coal carried on Jubbulpore line.

EAST INDIAN RAILWAY JUBBULPORE LINE.

Approximate Return of Traffic for Week ended 20th March 1870 on 223 miles open.

		Rs. As. P.	£ s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	4,395½	*17,492 14 6	1,603 10 4	54,533 20	17,620 3 9	1,615 3 9	3,218 14 1
Or per mile of Railway ...	.....	78 7 1	7 3 10	.....	79 0 3	7 4 10	14 8 8
For previous 10 weeks of half-year	57,621	2,02,477 6 4	18,500 8 7	4,73,255 39	1,22,375 7 9	11,217 15 0	29,778 3 7
Total for 11 weeks ...	62,016½	2,19,970 4 10	20,163 18 11	5,27,789 10	1,39,995 11 6	12,832 18 9	32,996 17 8
COMPARISON.							
Total for corresponding week of previous year ...	3,215	13,146 2 1	1,205 1 3	67,142 0	15,387 4 5	1,410 16 0	2,615 11 3
Per mile of Railway corresponding week of previous year ...	.....	58 15 3	5 8 1	.....	68 8 10	6 6 6	11 14 7
Total to corresponding date of previous year ...	41,403½	1,35,557 3 7	12,426 1 7	6,40,166 20	1,72,815 14 10	15,841 9 2	28,267 10 9

* Rs. 4,869-3-4 added on account of special trains run on 9th and 10th instant, and missing returns from Jubbulpore station in last week.

EASTERN BENGAL RAILWAY.

Approximate Return of Traffic for Week ended 19th March 1870 on 113½ miles open.

		Rs. As. P.	£ s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	30,397½	17,081 4 3	1,565 15 8	92,080 16	18,504 12 5	1,696 5 5	3,262 1 1
Or per mile of Railway ...	268	150 13 3	13 16 6	813 0	163 6 4	14 19 7	28 15 1
For previous 11 weeks of half-year	2,80,700	1,85,090 4 0	16,967 8 7	10,55,810 25	1,67,775 9 8	15,370 8 8	32,346 17 3
Total for 12 weeks ...	3,11,087½	2,02,180 8 3	18,533 4 3	11,47,891 1	1,85,280 6 1	17,075 14 1	35,603 18 4
COMPARISON.							
Total for corresponding week of previous year ...	24,572½	15,769 2 0½	1,445 16 1	1,10,797 39½	18,360 9 9	1,683 1 1	3,128 11 2
Per mile of Railway corresponding week of previous year ...	217	139 3 10	12 15 3	978 0	162 2 0	14 17 3	27 12
Total to corresponding date of previous year ...	2,05,708½	1,62,593 6 0½	17,654 11 6	12,18,588 18½	2,15,544 15 10	19,758 5 9	37,412 17 3

CALCUTTA AND SOUTH-EASTERN STATE RAILWAY.

Approximate Return of Traffic for Week ended 19th March 1870 on 28 miles open.

		Rs. As. P.	£ s. d.	Mds. S.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	5,241½	1,035 15 0	95 1 2	13,402 0	480 5 9	44 0 7	139 1 9
Or per mile of Railway ...	187	37 0 7	3 7 11	479 0	17 2 6	1 11 5	4 19 4
For previous 11 weeks of half-year	57,678½	10,986 13 3	1,007 2 5	1,44,736 0	5,747 5 9	520 17 0	1,533 18 8
Total for 12 weeks ...	62,920	12,023 13 0	1,102 3 7	1,58,138 0	6,227 11 6	570 17 7	1,673 1 2
COMPARISON.							
Total for corresponding week of previous year ...	4,984	1,054 6 3½	96 13 1	27,651 35	1,012 12 6	92 16 9	189 9 10
Per mile of Railway corresponding week of previous year ...	178	37 10 6	3 9 40	984 0	36 2 9	3 6 4	6 15 4
Total to corresponding date of previous year ...	62,546½	13,083 0 8½	1,199 7 7	1,89,958 5	7,844 3 6	719 1 0	1,918 8 7

Meteorological Telegraphic Report for the period 26th March to 1st April 187

STATIONS.	Date.	Hour.	Barometer reduced to sea-level.	Barometer reduced to sea-level.	THERMOMETER.		Humidity Sat. = 100.	WIND.		Rain.	Weather initials.	CLOUDS.
					Dry.	Wet.		Direction.	Velocity.			
CALCUTTA.	Mar. 26th	10	29.922	29.940	84.5	77.0	69	W N W	...	...	...	K
	27th	10	29.903	29.884	91.2	73.3	40	W N W	...	...	...	K
	28th	10	29.881	29.829	86.0	73.8	51	N	...	...	b	CS
	29th	10	29.891	29.809	93.2	72.2	32	W by N	...	...	...	...
	30th	10	29.730	29.754	86.4	72.4	49	W S W	...	...	b	...
	31st	10	29.812	29.830	95.2	71.0	26	W by N	...	...	...	...
	1st	10	29.673	29.691	89.0	73.4	44	S W	...	...	...	O
	2nd	10	29.783	29.801	98.5	73.2	25	W	...	...	b	...
	3rd	10	29.633	29.651	91.5	71.6	35	S W	...	...	b	...
	4th	10	29.840	29.858	100.5	75.5	27	S	...	...	b	...
	5th	10	29.695	29.713	80.0	72.5	39	N E	...	...	b	...
	6th	10	29.785	29.803	93.0	75.0	34	E	...	...	...	S, K
SAGOR ISLAND.	Mar. 26th	10	29.635	29.653	88.0	77.7	62	S W	...	...	b	...
	27th	10	29.635	29.653	98.6	78.2	36	S S W	...	...	b	...
	28th	10	29.933	29.939	83	78	78	N	1	...	b	...
	29th	10	29.804	29.814	88	80	69	S W	2	...	b m	CK, S
	30th	10	29.980	29.986	84	79	79	S	1	...	b	CK
	31st	10	29.816	29.852	87	81	76	S	1	...	b	O
	1st	10	29.908	29.914	85	81	83	W	1	...	b	...
	2nd	10	29.755	29.761	86	80	75	S W	2	...	b	S.
	3rd	10	29.836	29.842	85	81	83	W S W	2	...	b	C
	4th	10	29.691	29.697	84	81	72	S	2	...	b	...
	5th	10	29.813	29.819	88	78	62	W S W	3	...	b	...
	6th	10	29.671	29.677	89	80	66	S S W	3	...	b	...
CHITTAGONG.	Mar. 26th	10	29.853	29.859	88	80	69	W	1	...	b	...
	27th	10	29.717	29.723	87	80	72	S S W	2	...	b m, g, o	N
	28th	10	29.806	29.812	85	81	83	W	2	...	b	...
	29th	10	29.637	29.693	86	81	70	S S W	2	...	b	C
	30th	10	29.812	29.922	86	76	61	S W	4.9*	...	b	...
	31st	10	29.694	29.808	88	74	49	W S W	13.4*	...	b	...
	1st	10	29.826	29.937	83	76	71	E S E	7.2*	0.10	b, v, f	K, KS
	2nd	10	29.732	29.842	86	76	61	S W	8.3*	...	b	K, KS
	3rd	10	29.848	29.958	86	77	64	W	4.6*	...	b	K
	4th	10	29.737	29.846	88	75	62	W S W	10.8*	...	b	...
	5th	10	29.735	29.841	88	75	62	W	4.6*	...	b	...
	6th	10	29.695	29.713	90	77	53	W S W	11.9*	...	b	...
MADRAS.	Mar. 26th	10	29.675	29.783	90	75	47	W	4.1*	...	b	...
	27th	10	29.552	29.661	91	74	41	S W	12.4*	...	b	...
	28th	10	29.675	29.783	91	73	39	W S W	3.3*	...	b	...
	29th	10	29.570	29.678	93	77	45	S W	11.4*	...	b	...
	30th	10	29.752	29.861	89	78	59	N E	4.6*	...	b	...
	31st	10	29.560	29.669	90	78	56	W S W	8.4*	...	b	...
	1st	10	29.672	29.780	91	80	60	S	4.6*	...	b	K
	2nd	10	29.505	29.678	90	81	66	W S W	10.9*	...	b	...
	3rd	10	29.910	29.940	86	75	57	S E by S	7*	...	b	...
	4th	10	29.817	29.847	85	76	64	E S E	10*	...	b	...
	5th	10	29.950	29.989	87	76	58	E S E	7*	...	b o	...
	6th	10	29.840	29.876	85	75	60	E by S	11*	...	b o	...
OUTRACK.	Mar. 26th	10	29.917	29.947	86	75	57	E S E	4*	...	b	...
	27th	10	29.787	29.817	85	76	64	E	11*	...	b	...
	28th	10	29.865	29.895	87	73	48	E by S	4*	...	b	...
	29th	10	29.742	29.772	81	69	51	S E	10*	...	b	...
	30th	10	29.849	29.879	86	72	48	S S E	9*	...	b	...
	31st	10	29.759	29.789	84	72	53	S E	9*	...	b	...
	1st	10	29.863	29.893	87	75	55	S E	6*	...	b, m, o	...
	2nd	10	29.716	29.746	87	76	58	N by E	11*	...	m	...
	3rd	10	29.803	29.833	88	78	62	S E	7*	...	b o	...
	4th	10	29.695	29.725	86	77	64	S E by E	14*	...	b	...
	5th	10	29.875	29.907	87	71	42	W	8.6*	...	b	...
	6th	10	29.745	29.826	91	71	33	W	6.5*	...	...	CK, C
ARAB.	Mar. 26th	10	29.875	29.907	87	71	42	N E	4.5*	...	b m	...
	27th	10	29.875	29.907	87	71	42	N W	11.6*	...	b, m, f	...
	28th	10	29.760	29.841	93	70	27	N by W	7.5*	...	b m	...
	29th	10	29.853	29.935	85	73	54	N	4.6*	...	f, b, m	...
	30th	10	29.719	29.799	95	69	21	S	5.6*	...	b m	...
	31st	10	29.794	29.876	85	77	68	S W	9.0*	...	b m	...
	1st	10	29.631	29.715	93	70	27	W	11.8*	...	b m	...
	2nd	10	29.781	29.863	87	73	45	S	14.4*	...	b m	...
	3rd	10	29.671	29.752	95	73	28	S	9.6*	...	b m	...
	4th	10	29.798	29.880	87	71	43	S by E	13.0*	...	b m	...
	5th	10	29.768	29.850	87	77	61	S W	3.6*	...	b m	...
	6th	10	29.821	29.903	93	77	45	S	11.7*	...	m	C
CALCUTTA.	Mar. 26th	10	29.947	29.962	85	79	75	N W	1	...	b	CK
	27th	10	29.847	29.862	85	78	71	N W	2	...	b	CK
	28th	10	29.927	29.942	85	78	71	N W	1	...	b	C, CK,
	29th	10	29.800	29.835	84	77	71	N W	1	...	b	C
	30th	10	29.950	29.965	84	76	67	N W	1	...	b	...
	31st	10	29.815	29.830	86	77	64	N W	1	...	b	...
	1st	10	29.188	29.203	81	75	74	N E	1	...	b	...
	2nd	10	29.815	29.830	86	77	64	N W	1	...	b	...
	3rd	10	29.907	29.922	85	74	57	Calm	...	...	b, g	...
	4th	10	29.753	29.768	87	77	61	N W	3	...	b	...
	5th	10	29.840	29.855	84	73	56	N W	1	...	b	...
	6th	10	29.694	29.709	87	78	65	N W	1	...	b	...
CALCUTTA.	Mar. 26th	10	29.820	29.835	84	79	79	N E	1	...	b	...
	27th	10	29.704	29.719	88	79	65	N W	1	...	b	...
	28th	10	29.893	29.908	83	77	75	N E	1	...	b	...
	29th	10	29.802	29.817	87	79	68	N W	1	...	b	...
	30th	10	29.45	29.465	82	76	74	N E	1	...	b	...
	31st	10	29.724	29.739	87	79	68	N W	1	...	b	K

* Velocity of wind in miles per hour.

CALCUTTA.
The 2nd April 1870.HENRY F. BLANFORD,
Meteorological Reporter to the Govt. of Bengal.

Weekly Report of Rainfall compiled at the Meteorological Reporter's Office.

Circuit.	STATIONS.	Rain from 14th to 20th March 1870.	Rain from 21st to 27th March 1870.	RAIN FROM 1st JANUARY 1870.		REMARKS.
				Rain.	Up to date.	
		Inch.	Inch.	Inch.		
SOUTH-WESTERN.	Poorce ...	Nil	Not received	Nil	20th March 1870.	
	False Point ...	ditto	ditto	0.30	ditto.	
	Cuttack { Telegraph Office	ditto	0.20	1.80	27th March 1870.	
	{ Jail ...	ditto	Not received	1.70	20th March 1870.	
	Sambulpore ...	1.50	ditto	4.80	ditto ...	Not received 7th to 13th Mar.
WESTERN.	Balasore ...	0.53	ditto	1.83	ditto.	
	Midnapore ...	0.50	Not received	1.10	20th March 1870.	
	Baneorah ...	0.10	Nil	0.45	27th March 1870.	
	Chyebassa ...	0.33	ditto	1.08	ditto.	
	Purulia ...	0.04	0.13	1.53	ditto.	
CENTRAL.	Burdwan ...	Nil	Nil	0.20	ditto.	
	Raheegunge ...	0.04	0.53	0.70	ditto.	
	Sooree ...	Not received	0.10	0.10	ditto ...	Not received 28th Feb. to
	Deoghur ...	ditto	Not received	0.40	6th March 1870.	20th March
	Burhee ...	0.25	0.20	1.00	27th March 1870	Not received 3rd to 16th Jan. and 7th Feb. to 6th Mar.
NORTH-WESTERN.	Hazareebagh ...	0.31	0.33	0.95	ditto ...	Not received 14th to 20th Feb.
	Saugor Island ...	Nil	Nil	0.20	27th March 1870	
	Contai ...	Not received	Not received	Nil	13th Jan. 1870.	
	Calcutta ...	Nil	Nil	0.80	27th March 1870.	
	Howrah ...	ditto	ditto	1.42	ditto.	
NORTH-EASTERN.	Hooghly { Jail	ditto	0.20	1.30	ditto.	
	{ College	Not received	Not received	...	...
	Jessore ...	1.36	Nil	1.60	27th March 1870.	
	Kishnagar ...	0.02	Not received	0.18	20th March 1870	Not received 1st to 16th Jan.
	Ranaghat ...	Nil	Nil	Nil	27th March 1870	Not received 1st Jan. to 6th Feb.
SOUTH-EASTERN.	Bongong ...	ditto	0.10	0.60	ditto ...	Not received 1st to 9th Jan.
	Meharpore ...	ditto	0.25	0.70	ditto ...	Not received 1st Jan. to 6th Feb.
	Chondangah ...	ditto	0.20	0.20	ditto ...	Not received 1st Jan. to 6th Feb.
	Berhampore ...	Not received	0.40	0.40	ditto ...	Not received 14 to 20th March.
	Furcedipore ...	1.00	Nil	1.60	ditto ...	Not received 7th to 13th Feb.
NORTH-EASTERN.	Burrisaul ...	1.04	ditto	1.04	ditto.	
	Bhaugulpore ...	Nil	Nil	0.50	27th March 1870.	
	Monghyr ...	ditto	0.70	0.6	ditto.	
	Patna ...	0.04	0.11	0.19	ditto.	
	Arrah ...	0.10	0.25	0.35	ditto.	
NORTH-EASTERN.	Buxar ...	0.06	0.23	0.44	ditto.	
	Chuprah ...	Nil	Nil	Nil	ditto.	
	Chumpran ...	ditto	Not received	ditto	20th March 1870	Not received 3rd to 16th Jan.
	Benares ...	ditto	0.26	0.31	27th March 1870.	
	Rampore Benaulah ...	Nil	0.10	0.10	27th March 1870.	
NORTH-EASTERN.	Pubna ...	0.06	0.41	0.49	ditto.	
	Maldah ...	Nil	0.20	0.20	ditto.	
	Bograh ...	0.07	0.25	0.32	ditto ...	Not received 1st to 9th Jan.
	Dinapore ...	Nil	0.05	1.25	ditto ...	Not received 14th to 27th Feb.
	Rangpore ...	Not received	Not received	Nil	6th March 1870	Not received 21st to 27th Feb.
NORTH-EASTERN.	Julpigoree ...	Nil	Nil	ditto	27th March 1870	Not received 23th Feb. to 6th March.
	Bura ...	Not received	Not received	...	...
	Darjeeling ...	0.21	0.16	2.70	27th March 1870.	
	Gowalparah ...	Nil	Not received	0.15	20th March 1870	
	Gowhatti ...	0.60	ditto	1.40	ditto.	
NORTH-EASTERN.	Shillong ...	1.11	ditto	1.66	ditto.	
	Noxgong ...	Not received	ditto	0.70	6th March 1870	Not received 1st Jan. to 13th Feb.
	Tezpor ...	0.75	ditto	2.50	20th March 1870	
	Dholebagun ...	Not received	ditto	1.65	13th March 1870.	
	Seelsaugor ...	1.00	ditto	2.60	20th March 1870	Not received 1st to 9th Jan.
EASTERN.	Debrooghur ...	3.70	ditto	12.75	ditto ...	Not received 1st and 2nd Jan. and 7th to 13th March.
	Samongooding ...	1.50	ditto	2.26	ditto.	
	Cherra Poonjee ...	Not received	ditto	...	...
	Dacca ...	0.75	Not received	0.75	27th March 1870	Not received 14th to 20th Feb.
	Mymensing ...	0.14	ditto	0.21	ditto ...	Not received 3rd to 9th Jan.
SOUTH-EASTERN.	Sylhet ...	0.83	ditto	1.63	ditto.	
	Cachar ...	1.26	ditto	2.16	ditto.	
	Aenakhall Hylakandy ...	2.69	ditto	3.52	ditto.	
	Tipperah ...	1.06	ditto	1.15	ditto.	
	Noakhally ...	Not received	ditto	0.20	13th March 1870.	
SOUTH-EASTERN.	Chittagong { Telegraph Office	0.60	Nil	0.70	27th March 1870.	
	{ Jail ...	0.48	Not received	0.61	20th March 1870.	
	Rangamaten Hill ...	2.40	ditto	3.40	ditto.	
	Akyab ...	1.10	Nil	1.10	27th March 1870.	

CALCUTTA,
The 2nd April 1870.

HENRY F. BLANFORD,
Meteorological Reporter to the Govt. of Bengal.

Results of the Meteorological Observations taken at the Surveyor-General's Office, Calcutta, from 22nd to 31st March 1870.

Month.	Date	Mean reduced Barometer.	THERMOMETER.		Max. Solar radiation.	Mean Dry Bulb.	Mean Wet Bulb.	Computed Mean Dew-point.	Mean Degree of Humidity.	WIND.			Rain.	GENERAL REMARKS.
			Highest Reading.	Lowest Reading.						Prevailing direction.	Max. pressure.	Daily velocity.		
		Inches.	°	°	°	°	°	°			lb	Miles.	Inches	
March...	22nd	29.891	92.9	75.7	131.0	83.5	74.0	67.3	0.59	SSW & W	...	92.7	...	Clear & cirri.
	23rd	.872	94.0	75.0	131.6	84.0	71.8	63.3	.51	WSW & SW	...	116.3	...	Clear & cirri.
	24th	.864	88.5	75.5	125.5	81.3	71.5	64.6	.58	SSW & W	1.8	192.0	...	Cirrocumuli and clear. Brisk wind from 8 to 9 1/2 A.M.
	25th	.823	92.0	74.2	127.5	81.8	73.1	67.0	.62	SSW, W by N & W & S W	...	119.5	...	Cumuli & clear. Lightning at 8 1/2 & 11 P.M. Drizzled at 5 1/2 P.M.
	26th	.844	91.2	74.5	130.0	82.7	73.9	67.7	.62	W & N & W	...	125.0	...	Cumuli & clear.
	27th	.875	93.5	74.4	132.0	83.4	72.0	64.0	.64	NW & W by N	...	101.8	...	Clear & cumuli.
	28th	.813	93.4	75.0	131.0	84.3	73.0	65.1	.54	SW & W	...	109.0	...	Clear & strati. Foggy from 4 to 7 A.M.
	29th	.744	98.5	76.0	134.0	86.0	74.4	66.3	.53	SSW	...	163.2	...	Chiefly clear.
	30th	.711	101.2	76.2	133.4	87.3	73.3	64.9	.49	SSW	..	212.5	...	Clear.
	31st	.746	97.0	73.5	129.8	87.2	73.1	64.6	.48	SSW, SW & E	2.0	219.1	...	Clear & strati.

The mean Barometer, as likewise the Dry and Wet Bulb Thermometer means, are derived from the twenty-four hourly observations made during the day.

The Dew-point is computed with the Greenwich constants.—The figures in column ten represent the humidity of the air, the complete saturation of which being taken at unity.—The receiver of the lower rain gauge is 1 1/2 feet, and that of the Anemometer 70 feet 10 inches above the level of the ground.—The velocity of wind, as indicated by Robinson's Anemometer, is registered from noon to noon.

The extreme variation of temperature during the past ten days	...	27.0
The max. temperature during the past ten days	...	101.2
The max. temperature during the corresponding period of the past year	...	94.5
The mean humidity during the past ten days	...	0.55
The mean humidity during the corresponding period of the past year	...	0.64
		Inches.
The total fall of rain from 22nd to 31st...	{ by lower rain gauge	Nil
	{ by Anemometer gauge	Nil
Ditto ditto, average of sixteen previous years	...	0.50
Ditto between the 1st January and the 31st ultimo	...	0.80
Ditto ditto ditto, average of 16 years...	...	2.70

The 4th April 1870.

GOPEENATH SEN,
In charge of the Observatory.

No. 15

of 1870



SUPPLEMENT TO
The Calcutta Gazette.

WEDNESDAY, APRIL 13, 1870.

OFFICIAL PAPERS.

Non-Subscribers to the GAZETTE may receive the SUPPLEMENT, separately, on payment of six Rupees per annum if delivered in Calcutta, or twelve Rupees if sent by Post.

Weekly Return of Traffic Receipts on Indian Railways.

EAST INDIAN RAILWAY MAIN LINE.

Approximate Return of Traffic for Week ended 27th March 1870 on 1,131 miles open.

	COACHING TRAFFIC.				MERCHANDISE AND MINERAL TRAFFIC.				Total Traffic Receipts.
	Number of Passengers.	Coaching Receipts.			Weight carried.	Receipts.			
		Rs. As. P.	£ s. d.		Mds. Srs.	Rs. As. P.	£ s. d.		£ s. d.
Total Traffic for the week ...	1,12,194	1,84,007 7 11	16,922 7 1		7,21,008 30	3,47,443 4 3	31,848 19 4		48,771 6 5
Or per mile of Railway ...	.....	163 3 7	14 19 3		.....	307 3 5	28 3 2		43 2 5
For previous 11 weeks of half-year	13,18,945	24,16,930 4 2	2,21,561 18 11		80,26,504 10	46,79,399 0 0	4,28,944 18 1		6,50,496 17 0
Total for 12 weeks	14,31,139	26,01,537 12 1	2,38,474 6 0		87,47,603 0	50,26,842 4 3	4,60,793 17 5		6,99,268 3 1
COMPARISON.									
Total for corresponding week of previous year	1,00,237½	2,05,636 14 7	18,850 1 0		7,64,021 20	4,27,180 13 0	39,158 4 11		58,008 5 11
Per mile of Railway corresponding week of previous year	.....	181 13 1	16 13 4		.....	377 11 8	34 12 5		51 5 9
Total to corresponding date of previous year	12,66,671½	21,62,526 13 11½	198,231 12 8		95,31,686 0	52,61,40½ 12 10	4,82,295 14 2		6,80,527 6 10

EAST INDIAN RAILWAY JUBBULPORE LINE.

Approximate Return of Traffic for Week ended 27th March 1870 on 223 miles open.

		Rs. As. P.	£ s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	5,234½	11,061 12 3	1,013 19 11	51,231 0	18,814 7 3	1,724 13 2	2,738 13 1
Or per mile of Railway ...	.....	49 9 8	4 10 11	.....	84 5 11	7 14 8	12 5 7
For previous 11 weeks of half-year	62,016½	2,19,970 4 10	20,163 18 11	5,27,789 10	1,30,995 11 6	12,832 13 9	32,906 17 3
Total for 12 weeks	67,251	2,31,032 1 1	21,177 18 10	5,79,020 19	1,58,810 2 9	14,557 11 11	35,735 10 9
COMPARISON.							
Total for corresponding week of previous year	3,251½	8,801 0 5	806 15 3	41,397 10	10,746 0 9	985 1 1	1,791 16 4
Per mile of Railway corresponding week of previous year	.....	39 7 6	3 12 4	.....	48 3 0	4 8 4	8 0 5
Total to corresponding date of previous year	44,745	1,44,358 4 0	13,232 16 10	6,81,563 30	1,83,591 15 7	16,826 10 3	30,050 7 1

EASTERN BENGAL RAILWAY.

Approximate Return of Traffic for Week ended 26th March 1870 on 113½ miles open.

		Rs. As. P.	£ s. d.	Mds. Srs.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	24,862½	14,272 14 9	1,568 7 0	1,18,317 26	19,810 2 9	1,815 18 8	3,124 5 8
Or per mile of Railway ...	220	126 0 6	11 11 1	1045 0	174 14 9	16 0 8	27 11 9
For previous 12 weeks of half-year	3,11,087½	2,02,180 8 3	18,633 4 3	11,47,891 1	1,86,280 6 1	17,075 14 1	35,665 18 4
Total for 13 weeks	3,35,950	2,16,453 7 0	19,841 11 3	12,69,208 27	2,06,090 8 10	18,891 12 0	38,738 4 0
COMPARISON.							
Total for corresponding week of previous year	24,683½	16,042 6 3½	1,470 11 1	1,28,832 23	24,386 15 4½	2,235 9 5	3,706 0 6
Per mile of Railway corresponding week of previous year	219	141 10 6	12 19 8	1,138 0	215 5 5	19 14 10	32 14 6
Total to corresponding date of previous year	3,20,392	2,08,637 12 4½	19,125 2 7	13,47,421 1½	2,39,931 15 2½	21,093 15 2	41,115 17 9

CALCUTTA AND SOUTH-EASTERN STATE RAILWAY.

Approximate Return of Traffic for Week ended 26th March 1870 on 28 miles open.

		Rs. As. P.	£ s. d.	Mds. S.	Rs. As. P.	£ s. d.	£ s. d.
Total Traffic for the week ...	5,277½	1,079 13 3	98 19 8	12,062 0	1,387 14 6	127 4 6	226 4 2
Or per mile of Railway ...	188	38 8 11	3 10 8	429 0	49 9 1	4 10 11	8 1 7
For previous 12 weeks of half-year	62,926	12,023 15 0	1,102 3 7	1,58,138 0	6,227 11 6	570 17 7	1,073 1 2
Total for 13 weeks	68,197½	13,103 10 0	1,201 3 3	1,70,140 0	7,615 10 0	698 2 1	1,990 5 4
COMPARISON.							
Total for corresponding week of previous year	5,015½	1,139 10 2½	104 9 4	22,271 32	720 15 9	66 1 10	170 11 2
Per mile of Railway corresponding week of previous year	179	40 11 3	3 14 7	796 0	25 12 0	2 7 3	6 1 10
Total to corresponding date of previous year	67,562	14,222 10 10½	1,303 16 11	2,12,229 37	8,565 3 3	785 2 10	2,058 19 9

Meteorological Telegraphic Report for the period 2nd to 8th April 1870.

STATIONS.	Date.	Hour.	Barometer reduced to 32°.	Barometer reduced to sea-level.	THERMOMETER.		Humidity $\frac{\text{Sat.}}{100}$.	WIND.		Rain.	Weather initials.	Clouds.
					Dry.	Wet.		Direction.	Velocity.			
CALCUTTA.	April		Inches.		☉	☉				Inches.		
	2nd	10	29.906	29.924	86.5	73.5	51	N W	...	...	b	K, CK
		16	29.908	29.921	95.0	75.4	37	N N E	...	...	...	C
	3rd	10	29.948	29.966	88.0	74.0	49	W	...	...	...	CS, C
		16	29.814	29.832	95.3	73.2	30	W	...	...	...	CS
	4th	10	29.929	29.947	90.2	72.1	38	N E	...	...	...	S
		16	29.798	29.816	94.5	75.5	38	S by W	...	...	...
	5th	10	29.883	29.901	80.0	74.0	74	N E	...	0.27	o	
		16	29.735	29.753	91.6	73.8	39	S S E	...	...	b	
	6th	10	29.764	29.782	87.0	77.7	65	S W	...	...	b	
		16	29.627	29.645	96.2	70.8	24	W	...	...	...	K
	7th	10	29.743	29.761	87.5	74.5	51	S S W	...	...	b	
		16	29.624	29.642	95.9	70.2	36	S S W	...	...	...	K
	8th	10	29.769	29.787	87.3	79.0	67	S W	...	...	...	K
		16	29.627	29.645	91.8	80.4	58	S S W	...	...	...	N, S
SAGOR ISLAND.	2nd	10	29.926	29.932	86	74	54	N	1	...	b	C, S
		16	29.830	29.836	96	74	31	N E	3	...	b m	C
	3rd	10	29.956	29.962	88	77	58	N N W	...	...	b	C, C
		16	29.833	29.839	91	79	56	S W	1	...	b m	C, CK
	4th	10	29.931	29.937	88	81	72	W S W	1	...	b	C
		16	29.826	29.832	90	79	59	S	1	...	g, o, u	N
	5th	10	29.892	29.898	83	78	78	N E	1	0.20	b, m, p	N
		16	29.750	29.756	88	81	72	S	2	...	b m	C, CK
	6th	10	29.796	29.802	87	80	72	W S W	2	...	b m	C
		16	29.650	29.656	83	80	60	S S W	2	...	b	C
	7th	10	29.785	29.791	87	79	68	S W	2	...	b m	
		16	29.672	29.678	89	79	62	S S W	2	...	b	C
	8th	10	29.824	29.830	86	81	79	W S W	3	...	b	N
		16	29.656	29.672	87	82	79	W S W	3	...	b, m, u, g	N
CHITTAGONG.	2nd	10	29.719	29.828	91	78	53	N	3.6*	...	b	
		16	29.689	29.747	91	80	60	W S W	9.2*	...	b	
	3rd	10	29.771	29.880	93	76	43	N N W	5.5*	...	b, m	CS
		16	29.631	29.739	96	75	34	W	14.1*	...	b, m	C, CK
	4th	10	29.753	29.862	92	74	39	N	7.9*	...	b, m	CK
		16	29.632	29.740	95	76	38	W S W	10.5*	...	b, m	
	5th	10	29.766	29.875	92	74	39	W N W	3.8*	...	b, m	C
		16	29.618	29.728	89	74	46	N N E	10.6*	...	b, m	
	6th	10	29.662	29.771	92	72	34	W S W	4.4*	...	b, m	
		16	29.535	29.645	88	78	62	W S W	11.4*	...	b, g, m	C
	7th	10	29.647	29.756	91	80	60	S S W	6.1*	...	b, m	K
		16	29.548	29.657	88	80	69	W	15.1*	...	b	K
	8th	10	29.677	29.786	89	69	32	S E	9.4*	...	b, m, g, f, l	K
		16	29.577	29.687	88	79	65	S S W	10.3*	...	b, g	
MADRAS.	2nd	10	29.881	29.911	87	76	56	S E	8*	...	b c	
		16	29.811	29.841	87	77	61	E	15*	...	b	
	3rd	10	29.938	29.968	88	77	58	E S E	8*	...	b c	
		16	29.860	29.880	88	78	62	E	11*	...	b c	
	4th	10	29.930	29.960	90	74	44	E	6*	...	b c	
		16	29.832	29.862	88	77	58	E	11*	...	b c	
	5th	10	29.913	29.943	90	73	41	S S W	10*	...	b c	
		16	29.771	29.801	87	75	55	S E by S	15*	...	b	
	6th	10	29.824	29.854	93	74	37	S W by S	13*	...	b	
		16	29.692	29.722	88	75	52	S E by S	14*	...	b c	
	7th	10	29.812	29.842	83	75	52	S	14*	...	b c	
		16	29.711	29.741	86	76	61	S E by S	15*	...	b	
	8th	10	29.683	29.713	89	78	59	S S E	14*	...	b c	
		16	29.756	29.786	86	78	68	S S E	15*	...	b, p	
CUTTACK.	2nd	10	29.887	29.909	86	71	44	N by W	7.4*	...	f	C, N
		16	29.735	29.806	92	71	31	N W	11.6*	...	o, u	KS, CS
	3rd	10	29.915	29.937	88	75	52	N W	8.2*	...	m	C
		16	29.785	29.866	92	78	51	E	10.8*	...	u	C, KS
	4th	10	29.885	29.905	88	74	49	N W	8.2*	...	m	C
		16	29.733	29.814	94	73	33	S W	10.9*	...	b, d, l, t, r, u	KS
	5th	10	29.863	29.943	85	76	64	S W	10.0*	...	b, m, l, r, u	C
		16	29.688	29.769	90	71	35	W	12.2*	...	t, l, tr, u	KS, N
	6th	10	29.758	29.840	87	72	45	N by W	8.7*	0.30	m	C
		16	29.598	29.671	93	72	35	S	15.2*	0.40	o, u, t, l, r, d	KS, N
	7th	10	29.731	29.813	85	73	54	W	23.0*	...	u	C
		16	29.604	29.655	92	75	42	S	12.1*	...	u	KS
	8th	10	29.761	29.843	87	76	58	S by E	9.2*	...	b, m	
		16	29.601	29.682	93	79	51	S by E	10.8*	...	m	KS, C
ARREE.	2nd	10	29.925	29.940	86	75	57	N E	1	...	b	
		16	29.815	29.830	86	78	68	N W	1	...	b	CK
	3rd	10	29.877	29.892	85	79	75	N E	1	...	b	
		16	29.809	29.824	88	81	72	W	1	...	b, g	
	4th	10	29.905	29.920	86	79	72	N E	1	...	b	
		16	29.790	29.805	88	80	69	N N W	1	...	b, m	
	5th	10	29.815	29.830	86	79	72	N E	1	...	b	
		16	29.807	29.822	89	81	69	N W	1	...	b	CK
	6th	10	29.815	29.830	86	75	57	N E	1	...	b	
		16	29.711	29.726	89	79	62	N N W	1	...	b	
	7th	10	29.850	29.865	84	74	60	N E	1	...	b	
		16	29.744	29.759	83	76	71	N W	1	...	b	CK
	8th	10	29.923	29.938	83	77	75	E	2	...	b	
		16	29.799	29.814	85	77	68	N W	1	...	b	

* Velocity of wind in miles per hour.

CALCUTTA,
The 9th April 1870.HENRY F. BLANFORD,
Meteorological Reporter to the Govt. of Bengal.

Weekly Report of Rainfall compiled at the Meteorological Reporter's Office.

CIRCUIT.	STATIONS.	Rain from 21st to 27th March 1870.	Rain from 28th to 3rd April 1870.	RAIN FROM 1ST JANUARY 1870.		REMARKS.
				Rain.	Up to date.	
		Inch.	Inch.	Inch.		
SOUTH-WESTERN.	Pooree ...	0.21	Not received	0.21	27th March 1870.	
	False Point ...	Not received	ditto	0.30	20th March 1870.	
	Cuttack { Telegraph Office ...	0.20	Nil	1.80	3rd April 1870.	
	{ Jail ...	0.25	Not received	1.95	27th March 1870.	
	Sambulpore ...	Nil	ditto	4.80	ditto	Not received 7th to 13th Mar.
WESTERN.	Balasore ...	0.16	ditto	1.98	ditto	
	Midnapore ...	Nil	Nil	1.40	3rd April 1870.	
	Bancoorah ...	ditto	ditto	0.45	ditto	
	Chyebassa ...	ditto	ditto	1.98	ditto	
	Purulia ...	0.13	0.06	1.59	ditto	
CENTRAL.	Bardwan ...	Nil	0.30	0.50	ditto	
	Raneegunge ...	0.23	Nil	0.70	ditto	Not received 28th Feb. to
	Sooree ...	0.10	Not received	0.10	27th March 1870.	29th March
	Deoghur ...	0.10	ditto	0.50	ditto	
	Burhee ...	0.20	0.40	1.40	3rd April 1870	Not received 3rd to 16th Jan.
NORTH-WESTERN.	Hazareebaugh ...	0.36	0.72	1.67	ditto	and 7th Feb. to 6th Mar.
	Saugor Island ...	Nil	Nil	0.29	3rd April 1870.	Not received 14th to 20th Feb.
	Contai ...	Not received	Not received	Nil	13th Jan. 1870.	
	Calcutta ...	Nil	Nil	0.80	3rd April 1870.	
	Howrah ...	ditto	ditto	1.42	ditto	
NORTHERN.	Hooghly { Jail ...	0.20	ditto	1.80	ditto	
	{ College ...	Not received	Not received	.....	.....
	Jessore ...	Nil	Nil	1.60	3rd April 1870.	
	Kishnagar ...	ditto	Not received	0.18	27th March 1870	Not received 1st to 16th Jan.
	Ranaghat ...	ditto	ditto	Nil	ditto	Not received 1st Jan. to 6th Feb.
SOUTH-EASTERN.	Bongong ...	0.20	ditto	0.60	ditto	Not received 1st to 9th Jan.
	Meharpore ...	0.20	ditto	0.70	ditto	Not received 1st Jan. to 6th Feb.
	Choadangah ...	0.20	ditto	0.70	ditto	Not received 1st Jan. to 6th Feb.
	Berhampore ...	0.40	Nil	0.40	3rd April 1870...	Not received 14 to 20th March.
	Furzedpore ...	Nil	ditto	1.60	ditto	Not received 7th to 13th Feb.
SOUTH-WESTERN.	Burrisaul ...	ditto	Not received	1.04	27th March 1870.	
	Bhangulpore ...	Nil	Nil	0.50	3rd April 1870.	
	Monghyr ...	0.70	ditto	0.86	ditto	
	Patna ...	0.11	0.37	0.36	ditto	
	Arrah ...	0.25	0.50	0.85	ditto	
NORTHERN.	Buxar ...	0.23	0.60	1.04	ditto	
	Chuprah ...	Nil	0.20	0.20	ditto	
	Chumparan ...	1.50	Not received	1.50	27th March 1870	Not received 3rd to 16th Jan.
	Benares ...	0.26	ditto	0.31	ditto	
	Rampore Beaulah ...	0.10	Nil	0.10	3rd April 1870.	
NORTH-EASTERN.	Pubna ...	0.41	0.05	0.54	ditto	
	Maldah ...	0.29	0.11	0.31	ditto	
	Bograh ...	0.25	Nil	0.32	ditto	Not received 1st to 9th Jan.
	Dinagopore ...	0.05	Not received	1.25	27th March 1870	Not received 14th to 20th Feb.
	Rangpore ...	Not received	ditto	Nil	6th March 1870	Not received 21st to 27th Feb.
SOUTH-EASTERN.	Julpigoree ...	Nil	Nil	ditto	3rd April 1870	Not received 28th Feb. to 6th March.
	Buxa ...	Not received	Not received	.....	.....
	Darjeeling ...	0.16	Nil	2.70	3rd April 1870.	
	Gawalparah ...	Nil	Not received	0.15	27th March 1870.	
	Gowhaty ...	ditto	ditto	1.40	ditto	
SOUTH-EASTERN.	Shillong ...	0.08	ditto	1.74	ditto	
	Nowgong ...	Not received	ditto	0.70	6th March 1870	Not received 1st Jan. to 13th Feb.
	Tezpore ...	Nil	ditto	2.30	27th March 1870.	
	Dholebagaun ...	Not received	ditto	1.65	13th March 1870.	
	Sebsaugor ...	0.90	ditto	3.50	27th March 1870	Not received 1st to 9th Jan.
SOUTH-EASTERN.	Debrooghur ...	Not received	ditto	12.75	20th March 1870	Not received 1st and 2nd Jan.
	Samoogooding ...	ditto	ditto	2.25	ditto	and 7th to 13th March.
	Cherra Poonjoe ...	ditto	ditto	.....	.....
	Dacca ...	Nil	Not received	0.75	27th March 1870	Not received 14th to 20th Feb.
	Mymensing ...	ditto	ditto	0.21	ditto	Not received 3rd to 9th Jan.
SOUTH-EASTERN.	Sylhet ...	ditto	Nil	1.63	3rd April 1870.	
	Cachar ...	0.09	Not received	2.25	27th March 1870.	
	Aenakhall Hylakandy ...	0.13	ditto	3.65	ditto	
	Tipperah ...	0.95	ditto	2.10	ditto	
	Noakhally ...	Nil	ditto	0.20	ditto	Not received 14th to 20th Mar.
SOUTH-EASTERN.	Chittra- { Telegraph Office ...	ditto	Nil	0.70	3rd April 1870.	
	{ Jail ...	0.35	Not received	0.96	27th March 1870.	
	Rangamata Hill ...	Not received	ditto	3.40	20th March 1870.	
	Akyab ...	Nil	Nil	1.10	3rd April 1870.	

CALCUTTA,
The 9th April 1870.HENRY F. BLANFORD,
Meteorological Reporter to the Govt. of Bengal.

Abstract of Observations as received in the Meteorological Reporter's Office, Calcutta,

DURING THE HALF MONTH FROM 16th TO 31st JANUARY 1870.

N. B.—The Barometric data are reduced for temperature, and not for height above sea level.

STATIONS.				BAROMETER.				THERMOMETER.										HUMIDITY.				RAIN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
No.	Name.	Height above sea level.	Ft.	MEAN OF				SOLAR RADIATION.				Mean of max.	Mean daily range.	Mean of min.	MEAN OF				HIGHEST MAX.		LOWEST MIN.		MEAN OF				In inches.	No. of days.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
				Mean.	4 hours.	10 hours.	16 hours.	22 hours.	Range.	Mean.	Max.				Min.		Day.	Day.	Day.	Day.	Day.	Day.	Day.	Day.	Day.	Day.			Day.	Day.	Day.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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* No correction for index error has been applied to the Benares barometric reading.

CALCUTTA, MONTH OF JANUARY.

Mean barometric pressure of 15 years	30.025	Mean temperature of 15 years	67.8	Mean humidity of 15 years	71	Mean rainfall of 15 years	0.41
Ratio ditto of 1870	29.962	Ditto ditto of 1870	68.1	Ditto ditto of 1870	63	Actual fall of 1870	0.77
Defect in 1870	-0.063	Excess in 1870	0.5	Defect in 1870	8	Excess in 1870	0.36

CALCUTTA,

The 10th April 1870.

HENRY F. BLANFORD,

Meteorological Reporter to the Govt. of Bengal.

Mean Pressures and Temperatures of the preceding Table reduced to sea level, with mean Wind directions.

STATIONS.	Mean Barometric pressure reduced to sea level.	Mean Temperature reduced to sea level.	Proportional prevalence Max=100.	Mean direction.
Port Blair	29.904	79.3	94	N 43° E
Madras	29.953	...	72	N 61° E
Akyab	...	...	...	...
False Point	30.062	70.8	69	N 49° E
Cuttack	30.038	71.6	31	N 3° E
Saugor Island	30.003	70.8	65	N 10° E
Chittagong	29.970	70.7	81	N 25° W
Calcutta	30.002	69.0	50	N 83° W
Jessore	29.979	68.3	78	N 2° E
Dacca	29.992	68.5	69	N 45° W
Cachar	29.986	65.9	65	S 30° W
Hazareebaugh	30.006	68.6	65	S 78° W
Berhampore	29.988	68.4	50	N 41° W
Patna	29.999	63.0	69	S 78° W
Monghyr	29.996	64.7	16	S 77° W
Darjeeling	30.031	63.2	6	S 47° W
Gowalparah	30.058	66.9	34	S 55° W
Shillong	30.041	66.5	19	N 69° W
Benares	30.041	62.7	22	N 60° W
Roorkee	...	...	...	...

NOTE.

Barometric Pressure.—The pressures in column 3 of the above Table for all stations below 500 feet are reduced from those given in column 3 of the Table on the previous page by adding the weight of a column of air of the temperature given in column 17. For stations of above 500 feet elevation, the reduction is made by Dippe's Table as given in Guyot's Meteorological and Physical "Tables."

Temperature.—The temperatures in column 3 are deduced from those in column 17, on the preceding page, by adding 1° Faht. for every 350 feet.

Wind Direction.—The mean wind direction and its comparative prevalence are calculated from the whole number of wind observations recorded during the half-month, the latter is given as a percentage of the whole number of observations. The mean direction is calculated in the usual way by the sines and cosines of the compass points.

The above being all comparable, afford the data for constructing a meteorological chart for the half-month, which shall shew the isobaric and isothermal lines, and the resultant wind directions, which last may be represented by arrows of varying length proportioned to the prevalence of the wind. To these may be added the rainfall from the previous Tables.

HENRY F. BLANFORD,

Meteorological Reporter to the Government of Bengal.

Results of the Meteorological Observations taken at the Surveyor-General's Office, Calcutta, from 1st to 7th April 1870.

MONTH.	Date.	Mean reduced Barometer.	THERMOMETER		Max. Solar radiation.	Mean Dry Bulb.	Mean Wet Bulb.	Computed Mean Dew-point.	Mean Degree of Humidity.	WIND.			Rain.	GENERAL REMARKS.
			Highest Reading.	Lowest Reading.						Prevailing direction.	Max. pressure.	Daily velocity.		
		Inches.	°	°	°	°	°	°			lb	Miles.	Inches	
April ...	1	29.718	98.6	78.0	133.0	86.2	76.7	70.0	0.60	SW & SSW	1.0	170.5	...	Chiefly clear. Lightning from 9 to 11 P.M.
	2	822	95.2	75.0	128.0	84.6	73.3	65.4	.54	W by N & N	...	107.4	...	Clouds of different kinds.
	3	863	96.0	77.2	131.2	86.6	73.0	64.8	.50	S & W	...	134.9	...	Cirri & cirro strati.
	4	854	96.5	78.0	130.2	85.6	72.1	62.6	.48	WSW & SSW	3.0	145.9	...	Clouds of different kinds. Brisk wind between 6 & 0½ P.M. Thunder & lightning at 5, 6, & 9 P.M. Drizzled at 5½ P.M.
	5	803	91.6	75.7	125.0	82.7	73.2	66.5	.59	SSE & variable	0.4	159.2	0.27	Overcast & clear. Thunder from 5 to 9 A.M. Lightning at 3, 4, & 7 A.M. Slight rain at 3½, 6, 7, & 9 A.M.
	6	706	96.2	76.3	132.2	84.9	75.2	68.4	.59	SSW & S by W	...	143.4	...	Chiefly clear.
	7	692	96.9	75.0	130.0	84.9	74.8	67.7	.58	S & SSW	...	155.6	...	Chiefly clear.

The mean Barometer, as likewise the Dry and Wet Bulb Thermometer means, are derived from the twenty-four hourly observations made during the day.

The Dew-point is computed with the Greenwich constants.—The figures in column ten represent the humidity of the air, the complete saturation of which being taken at unity.—The receiver of the lower rain gauge is 1½ feet, and that of the Anemometer 70 feet 10 inches above the level of the ground.—The velocity of wind, as indicated by Robinson's Anemometer, is registered from noon to noon.

The extreme variation of temperature during the past seven days	...	23.6
The max. temperature during the past seven days	...	98.6
The max. temperature during the corresponding period of the past year	...	99.5
The mean humidity during the past seven days	...	0.55
The mean humidity during the corresponding period of the past year	...	0.64
		Inches.
The total fall of rain from 1st to 7th	... { by lower rain gauge	0.27
	... { by Anemometer gauge	0.25
Ditto ditto, average of sixteen previous years	...	0.34
Ditto between the 1st January and the 7th current	...	1.07
Ditto ditto ditto, average of 16 years...	...	3.04

Annual Results for 1869.

Mean height of the barometer for the year	...	...	29.793
Mean dry bulb thermometer for the year	...	...	79.8
Mean wet bulb thermometer for the year	...	...	74.4
Mean degree of humidity for the year	...	...	0.75
			Inches.
Total amount of rain during the year	...	...	61.61

The 11th April 1870.

GOPEENATH SEN,
In charge of the Observatory.

No. 16

of 1870



SUPPLEMENT TO The Calcutta Gazette.

WEDNESDAY, APRIL 20, 1870.

OFFICIAL PAPERS.

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Narrative of the Distress in the Patna Division during 1869, and of the Relief Measures adopted.

From R. P. JENKINS, Esq., Commissioner of the Patna division, to the Secretary to the Government of Bengal, Revenue Department,—(No. 154R, dated Patna, the 27th February 1870.)

I HAVE the honor to submit a brief report on the late period of scarcity and the measures adopted for the mitigation of distress in the six districts of this division.

2. The year 1868 opened under the most favourable conditions. The rice harvest of 1867 had been unusually good; the cold weather crops were in a very promising condition, and prices of grain exceptionally low. There was indeed every reason to anticipate that the year would be one of great prosperity. With the exception of some slight apprehensions in Champaran and Gya during the month of January, caused by the absence of the light rains which usually fall at that season, nothing occurred to cloud this prospect until the end of February and beginning of March, when the east and south-east of Sarun, the south-west corner of Tirhoot, and the greater part of Shahabad, were successively visited by several severe storms of rain and hail. The damage done to the standing crops by these storms was considerable, and in Shahabad especially the alarm excited at the time among the grain dealers was such that prices at once rose 10 or 12 seers in the rupee. But nowhere was the loss sustained by the people so serious as to induce anything like distress or to demand the assistance of Government.

3. The earliest apprehensions of future scarcity arose in Sarun, and were reported in a letter dated 2nd April 1868, by Kazee Ramzan Ali (now deceased), one of the most sagacious and enlightened zemindars of that district. That gentleman stated that owing to the injury caused to the crops by heavy falls of rain and hail in the two preceding months, grain and provisions of all kinds were becoming dearer, and that there was a general impression abroad among the people that another famine, which would exceed in severity the famine of 1866, was near at hand. I accordingly at once addressed the Collector of Sarun, and directed him to institute very careful enquiries on the subject. About the same time I had a personal interview with the Kazee, and from certain remarks which he made regarding a rumoured failure of the wheat and barley crops in the North-West Provinces, and from my own knowledge of the generally favourable state of the local markets at that period, I was inclined to think that his own fears had been raised more by what he had heard from without than by anything which he had seen or learnt directly affecting the Sarun district. On the 21st April, the collector informed me *demi-officially* that the newly gathered rubbee harvest had been an "extremely bad one," that "certainly some amount of apprehension" was felt by the people; that "prices had risen considerably;" that the year would be "clearly one of high prices;" and that "if the rain crops failed he thought it quite possible that there might be a good deal of distress." Having further remarked that so far as he could learn no actual distress prevailed anywhere, and that no serious inconvenience was felt by any class

of persons in consequence of the recent rise in prices, the collector concluded his report in the following terms:—"I think it only advisable that the state of prices should be carefully and closely watched during the next six months, but I do not see that anything else can be done. I should extremely deprecate any attempt to put an unusual sum of money afloat in these districts at present. If we are to have anything in the way of distress, it will be caused by actual absence of grain; and under such circumstances all classes must submit to be put on short diet, and the poorest, the earliest and longest. If therefore we were to put unusual money into their hands now, it would only tempt them to maintain their usual rate of consumption and aggravate the distress hereafter. However, there is certainly no distress prevailing at present, and, as far as I can hear, there is no reason to dread any unless the bad rubbee crop is followed by a bad bhadoie one."

4. In forwarding a copy of this report to Mr. Secretary Dampier on the 24th April, I mentioned that a good deal of grain was being exported from this division, and recommended that the railway officials should be directed to furnish bi-weekly returns of exports of grain, and to show by a comparison with previous years' exports whether a more than ordinary quantity was leaving these parts.

5. The foregoing incidents, though of no great importance in themselves, and unlikely in most years to have attracted more than passing notice, have yet appeared worthy of mention when reviewed in conjunction with subsequent events. In Tirhoot notably, and to some extent in Sarun, the tracts in which the severest distress eventually appeared were those that had suffered from the storms in the spring of 1868.

6. The average rate at which rice was selling at this time throughout the division was 25 seers per rupee, or 6 seers lower than the rate which prevailed during the corresponding period of the year 1867. From this circumstance, therefore, as well as from the fact that large exportations of grain were being made, it was to be presumed that there was a good supply of grain in the local markets, and that the partial failure of the spring harvest had not had any sensible influence on the division generally.

7. From the end of April till the middle of June nothing happened worthy of record. On the 18th June rain fell more or less in most districts, and the rainy season appeared to be setting in early. The fall, however, was of short duration, and was followed by a long period of dry weather. On the 26th June the Collector of Chumparun reported that there had been excessive drought in his district up to date, in consequence of which some of the drier descriptions of paddy land in the south had not been sown, while the first sowings of rice in Tuppeh Bulthur, the great rice garden of the north of the district, had been entirely lost. On the 6th July the Collector of Shahabad wrote that "cultivation had entirely ceased for want of rain, and rice had risen from 23 to 18 seers per rupee." On the 16th idem a very unfavourable report arrived from Gya. It was stated that "the dhan was very badly off," that "great apprehensions had arisen," and that "the market for grain was rising continually." It was not long before a similar bad state of things was observed in the remaining districts. On the 24th July the Collector of Sarun represented that although latterly there had been some improvement, "the weather had been extremely unfavourable up to 16th idem," that "scarcely any rain had fallen since the 18th June," and that the reports which he had received from all parts of the district were uniformly bad. On the 4th August uneasiness began to prevail in Tirhoot, and the rice-crop was reported to be very backward, owing to the absence of rain. On the 17th August the Collector of Patna reported that rain was much wanted to enable the ryots to plant out the young rice; and before another month had passed by he estimated that the out-turn of the rice would scarcely exceed one-third of the produce of an ordinary harvest.

8. It seems unnecessary to reproduce here the various reports that were received from each district during the months of August, September, and October. It will be sufficient to say that for the most part they were of a gloomy character, predicting with more or less certainty an extensive failure of the rice harvest, and that the season was marked by a great deficiency of rain, the fall in some places having been not much greater than in the year 1865. At length, on the 23rd October, when there seemed to be no longer a doubt that the rice crops would be very small, and there was little probability of a good harvest in the following spring, I felt that the time had come to make preparations for meeting any distress that might arise, and to this end I issued the following circular to each district officer:—

"The latest reports from most of the districts regarding the state and prospects of the crops are anything but encouraging. Very little hopes are now entertained of an average rice crop, and as far as can be judged from the present state of the weather, the spring or rubbee crop will at best be a partial one. Under these circumstances I think it is time that some scheme should be considered for affording relief to the poor, in case the failure of the rubbee crop renders relief measures necessary. I accordingly request you to draw out, and submit to this office on an early date, plans and rough estimates of relief operations in those parts of your district in which you think such relief may be necessary.

"I wish you to understand that I am only anxious to be prepared to meet emergencies should they arise, and that I do not anticipate such distress as will necessitate Government measures for relief *unless the next rubbee crop turns out to be a failure*. Rain may come any

time during the next month, and if it does, the rubbee sowings will be secured, and we may hope for at any rate an average harvest in the spring, which will keep prices down and afford ample labour."

9. At this time it was generally believed that a season of great scarcity was imminent in the North-West Provinces, and on the 5th November a resolution was issued by the Government of India prescribing the course to be pursued by local officers in view of a threatened loss or failure of harvests, and the modes in which relief, when necessary, should be administered to the people. Under the former head were enumerated the preparation and submission by district officers of periodical reports of the rain-fall, state of crops and prices of grain, as well as of returns of imports of grains by rail, river, and road, while any interference with the grain trade was strictly prohibited. Under the latter head a general principle was laid down that the grant of relief in all cases should, if possible, be made contingent on some labour being given in exchange; and minute subsidiary instructions were added regarding the organisation of relief houses (wherever gratuitous relief might be required), the nature of special works to be undertaken, and the classification, payment, and supervision of the pauper labourers employed upon them. Of the precautionary measures enjoined, all save one had previously been in force in this division, and steps were taken without delay to secure the regular and punctual submission by the railway officials of returns of imports by rail. Such returns were thenceforth duly submitted, but from want of adequate agency it was found impossible to ascertain the quantity of imports made by river and road. With regard to the instructions connected with the subject of relief, I need only here state that when the time came for carrying them out they were observed as closely as circumstances and opportunities allowed.

10. On the 4th December I started on my cold-weather tour, having previously applied for the services of a junior civil officer in consequence of the large increase of correspondence occasioned in my office by the unfavourable state of the division. I proceeded first to Shahabad and from thence to Chuprah, where I was joined on the 19th December by Mr. C. F. Worsley, who had in the mean time been appointed my special assistant for a term of six months (afterwards extended to one year), and who subsequently accompanied me in my tour through Sarun, Chumparun, and Tirhoot. Generally, I found that the cold-weather crops were rather better than I had expected them to be, but my observations confirmed the opinion which I had already formed, *viz.*, that the spring harvest would be a failure, and would inevitably be followed by the appearance of distress.

11. At the close of the year 1868 the average prices of food grains in each district were as follows:—

Districts.	Common rice per rupee.	Pulses per rupee.	Wheat per rupee.	Janerah, &c., per rupee.
Chumparun	19	16	19	21
Gya	14	16	13	17
Patna	15½	19½	15	25
Sarun	17	20	13	24
Shahabad	16½	17½	12	19½
Tirhoot	19½	20	18	30

The districts in which the worst apprehensions were at this time entertained were Gya, Patna, and Sarun. In Sarun the Collector was of opinion that there would certainly be general distress in the following March, while the Collector of Gya feared that it would commence in his district by the middle of January in any case, and that in the event of the rubbee crop failing there would be actual famine. In Patna signs of pressure were already beginning to appear.

12. By the commencement of 1869 it had been fully ascertained that the rice harvest had been miserably poor. Probably throughout the whole division the out-turn on an average had not exceeded a six annas crop, while in some districts, such as Gya and Sarun, it had not amounted to four annas. The extraordinary drought which had already prevailed for several months still continued, and lasted with scarcely any intermission till the end of March, when the cold-weather crops were gathered. The harvest, though no doubt a poor one, still turned out better than had been expected. But before the actual result of the harvest could be known, the apprehensions of a failure and the high prices of grains had served to create a demand for employment, and as the condition of the class of hired labourers was becoming more straitened every day, it was found advisable before the end of January to open relief works in Gya, Patna, Sarun, and Shahabad.

13. In the appendix submitted herewith will be found a detailed list of relief works undertaken, and the cost of their construction in each district. I propose, therefore, in the body of this report to omit all particulars relating to such points.

14. It may be mentioned here that, in addition to the aid afforded to the people by the opening of relief works, two temporary measures were devised by the Government of India with a view to stimulate the importation of grain into districts suffering from scarcity, and to promote the distribution of food in the interior of each district. The first measure effected a considerable reduction of the freight chargeable on grain passing upwards from Bengal by rail. The second directed the suspension at ferries and toll-bars of the levy of tolls on carts and animals conveying grain. So far, however, as this division was concerned, neither of these expedients was productive of any marked results, owing in the one case to importation being carried on chiefly by river, and in the other to the extreme paucity of existing toll-bars.

15. The relief works projected by the district officers consisted of the construction or repairs of roads and the excavation of tanks, and employment on them was offered to all applicants at the lowest rates of wages with which it was physically possible to support life without impairing the capacity of the laborers to work. The wages allowed were $1\frac{1}{2}$ or $1\frac{1}{4}$ anna for each man, one anna for each woman, and nine pies for each child, per day. Except in Patna (where work was eagerly accepted, and where in the end of March there were more than 2,000 laborers daily employed) the numbers who availed themselves of the occupation thus offered did not during the first three months exceed in any district a few hundred persons. But from the beginning of April a marked change was perceptible generally, and the extension of relief works to Tirhoot and Chumparun was found necessary.

16. From this period until the setting in of the rains the demand for employment steadily increased, and the position of affairs was such as to cause the gravest anxiety in respect to the future. Prices of grain rose gradually until in some places they became nearly as high as famine rates; pasture began to fail everywhere, and wells to dry up, while agricultural operations were almost completely suspended.

17. The following extracts from my monthly reports to Government will serve to show what the state of the division was during the three perhaps most critical months of 1869.

18. (Extract from report dated 6th May 1869.) "The district reports are, I regret to say, of a very discouraging nature. Water is everywhere becoming more and more scarce, and pasture for cattle is scarcely anywhere to be found. At the same time the sowing of the bhadoi crop is rendered impossible by the hardness of the soil, and thus another failure of this important harvest is seriously threatened. I have for the last month been anxiously watching for a good and general fall of rain, being fully convinced that our only danger lay in the continuance of the prolonged drought that has prevailed all over this division. The apprehensions which I expressed in my report of the 6th ultimo are being only too surely realised. The produce of the late harvest has not been allowed to find its way into the market, and the spring sowings cannot be carried on. In the Patna district applications for work are, as I stated in my last report, increasing every week; the latest returns shewing that upwards of 4,000 laborers are employed daily at the relief works. That the real time of pressure is now fast approaching in this district, there can, I think, be no doubt, and the collector has very wisely acted in hitherto regulating the rates of wages according to the condition and the wants of the people, and thereby preventing any but the really destitute from encroaching upon the funds at his disposal. He is thus in a position now to extend his relief operations at a moment's notice to any degree that may be found necessary, without incurring the risk of deficient funds to meet the expenditure, or of delay in applying for a fresh grant. The importation of rice into Patna for local consumption is now commencing, and it is to be hoped will continue steadily to increase.

"In the Sarun and Tirhoot districts employment at the relief works, especially at the embankment works being carried on along the Gunduck is more eagerly sought after by the laboring classes. At the last-named works about 6,500 persons are employed daily, and fresh applications for employment are still being made. It must be observed, however, that the rates of wages paid at these works by the Public Works Department are considerably higher than those paid in Patna, and that the large number of laborers cannot therefore be accepted as so sure an indication of approaching distress as in the latter district.

"In Chumparun the relief works have not yet proved attractive, and the number of laborers resorting to them have not come up to the Collector's expectations.

"In Shahabad there is so much employment to be obtained at the canal works that the collector has found it necessary gradually to reduce the district relief works. The latest returns show the number of laborers employed at both sets of works to be respectively, in round numbers, 1,750 and 350 daily.

"I see no reason to doubt that if the rainy season sets in at the usual time the relief works that have been sanctioned will generally suffice for the alleviation of any distress that may appear within the next few months. The fact, however, cannot now be disguised that there will be more wide-spread distress than was recently anticipated by the district officers, though it will probably be confined to the class of hired laborers. The ryots, as a rule, are hoarding their grain, and are unlikely to be subjected to any severe pressure."

19. (Extract from report dated 4th June 1869.) "With the exception of a partial improvement that has taken place in the district of Tirhoot, the state of the division has become decidedly worse during the last few weeks. In nearly every district rain has fallen in the past month, but scarcely anywhere has it been sufficient to saturate the earth and enable the people to commence ploughing. The present indeed is a most critical period. The bhadoie sowings, which in ordinary years are completed in the early part of June, have as yet hardly commenced in any district. At the same time it is important to add that though some of the district officers believe that the season for sowing the rain crops has almost passed away, I have been assured by experienced native landholders that no fears need be entertained in regard to the bhadoi harvest so long as the crops are in the ground before the end of this month, and seasonable rains follow.

"Prices generally have risen in the division, and in some instances very rapidly and to a rather alarming height.

"In the Patna district distress is evidently spreading, and by reason of the high prices prevailing in the interior, the relief rates of wages hitherto allowed are found no longer adequate to the support of the laborers. In the Barrh and Behar sub-divisions common rice has risen during the month from fifteen and sixteen seers to twelve seers per rupee. The severity of the times is no less proved by the rapidly increasing number of laborers at the relief works, the average daily number having risen from 5,062 for the week ending 2nd May to 5,908 and 6,940 for the weeks ending respectively 9th and 16th idem. All the relief works in this district have been visited during the month by a deputy collector, and I am happy to say that the arrangements in force for the supervision of the works, and for the payment and management of the laborers, are very satisfactory, and require as a rule but little modification.

"The importation of rice into Patna for local consumption has in no way answered my expectation, the exports by rail for the three weeks ending 16th May having nearly amounted to 20,000 maunds, and having exceeded the imports for the same period by 7,850 maunds. Considering the brisk import trade of the adjoining district of Shahabad, I am quite unable to account for the existence of such an anomalous state of things in Patna. The district of Chumparun, which had previously fared better than most districts, and had produced but few applicants for employment, is now beginning to feel pressure; and in the case of this district the ordinary difficulties seem likely to be increased by the strong disinclination evinced by the people to go beyond their own doors in search of works.

"The condition for Sarun furnishes cause for anxiety. The effects of the drought have probably been as severe here as in any part of the division, and there seems little likelihood at present of the cultivators being able to plough their fields before the regular commencement of the rains. This district will require to be very carefully watched for the next two or three months, and it will, I consider, be absolutely necessary for Government to sanction additional relief works.

"With the exception of the sub-divisions of Tajpore and Durbhunga, the district of Tirhoot has much improved. The Tajpore sub-division is in a worse condition than any other part of the district, and here it will be necessary to keep a succession of relief works. The Durbhunga raj will probably supply sufficient employment for all who want work in that part of the district. Cholera in some places is committing great ravages.

"The state of Shahabad is somewhat critical. Great reliance has hitherto been placed on the canal works as a means of relieving distress, but it now appears that the most necessitous persons are unable to get occupation on these works in consequence of their being in the hands of contractors who decline to engage any but skilled and able-bodied workmen. It has thus become necessary to extend the district relief works. The want of rain in this district as elsewhere is severely felt.

"The sub-division of Sasseram is probably in a more precarious condition than the rest of Shahabad. It has been severely visited by cholera, and rice is selling at a very high price. The singularity is that under the three-fold operation of drought, high prices, and disease, no distress has yet appeared in the sub-division."

20. With reference to the remark contained in the last extract regarding the inadequacy of the relief afforded by the canal works in Shahabad, I must mention that on the matter being brought to the notice of Government, an arrangement was sanctioned by which one mile of the works was made over to the charge of the sub-divisional officer of Sasseram with a view to the employment thereon of unskilled and destitute laborers. The expedient, however, failed of success, the average daily number of laborers attending the work between July and September never having exceeded in any week 122, while for several weeks it was less than 70.

21. (Extract from report dated 5th July 1869.) "The prospects of the division have greatly improved during the past month. Rain has fallen everywhere, and in some places very abundantly, while in each district it has been quite sufficient for agricultural purposes. The dhan and rain crops have for the most part been sown, and are coming on well. The weather could not be more favorable than it is at present. I have had little means as yet of judging of the effect which this auspicious change in the weather has had upon relief works, few returns having been received for a later period than the week ending 19th June. Up to that date, however, there had been a very considerable increase in the number of laborers employed

daily, though the increase was chiefly confined to the districts of Patna, Shahabad, and Tirhoot. It is certainly remarkable that there has been little or no fall in prices since the setting in of the rains. In every district they are now higher than they were at the end of May. This continued prevalence of higher prices seems to indicate one of two things: either that the supplies of grain held by the corn-dealers have been over rated, or that if possessed of large supplies, the dealers are unwilling to bring them freely to market until the season is more advanced, and the prospects of good harvests are rendered more certain. In a few weeks' time the doubt will probably be cleared up. My present opinion is that local stores are not sufficiently large to allow prices to be much affected by favorable weather, and that until the Indian corn and other bhadaï crops are gathered, no material fall in prices must be expected.

"It will be necessary, I think, still to continue relief works in the Tajpore sub-division, in Tirhoot, and probably to commence some in the Hajeeপুর sub-division; the rest of the district will probably be able to take care of itself. In the Behar sub-division, in Patna, relief works must certainly be kept up, the ryots this season being too poor to employ much hired labor. I cannot speak with any certainty in regard to other districts, but I anticipate no further demands for relief works from Gya and Shahabad. In Sarun there had been a marked decrease, even before the regular commencement of the rains, in the number of laborers on relief works; and in Chumparun there had been no such increase as to indicate the existence of wide-spread distress.

"The exportation of rice from Patna by rail is at last beginning to decline, the imports for the fortnight ending 20th June having exceeded the exports by maunds 4,368. The import trade of Shahabad is still as brisk as ever."

22. As the above extracts do not contain much information respecting Gya, I may observe that although in this district prices rose unusually high, and the want of water and pasture was severely felt, yet there was less demand for employment than might reasonably have been expected. The reasons of this seem to have been that in those parts of the district where grain was especially dear, the poorer classes were in a very small degree dependent upon it for food, being accustomed to live chiefly on jungle produce, and that so long as they could subsist in this way, they were unwilling to work on roads for a minimum rate of wages.

23. Taking the division generally, I should say that the most trying time for the people was towards the end of June 1869, when prices had nearly reached their highest point, and the relief works were more crowded than at any other period. That the pressure indeed was very severe may be inferred from the annexed statements.

Statement showing the average prices of food grains in each district for the last week of June 1869.

Districts.	Common rice per rupee.	Pulses per rupee.	Wheat per rupee.	Janerah per rupee.
Chumparun	15	15	16	19
Gya	11	12	12½	15
Patna	12½	14½	13	16
Sarun	14½	16½	13½	18
Shahabad	13	13	13	14½
Tirhoot	14	18	15	20

Statement showing the daily number of laborers employed at relief works during the last week of June 1869.

Districts.	Daily No. of laborers.	REMARKS.
Chumparun	1,140	
Gya	4,002 (1)	(1) 1,617 on canals. 2,385 under Public Works Department.
Patna	17,220 (2)	(2) 15,884 on district works. 1,336 under Public Works Department.
Sarun	5,287 (3)	(3) 2,792 on district works. 2,495 under Public Works Department.
Shahabad	7,636 (4)	(4) 1,468 on district works. 6,168 on canals.
Tirhoot	3,406 (5)	(5) 2,300 on district works. 1,206 under Public Works Department.
Total	38,691	

24. During the month of July, in which the weather was very seasonable indeed, there was a decrease, in round numbers, of 8,000 laborers at the relief works. Prices, however, still remained extremely high. In August, owing to a very deficient fall of rain, the safety of the rice crops was seriously endangered; and it was not until the early part of September, when heavy rains fell, that the crops could be considered at all secure. For these reasons it was held inadvisable to reduce the relief works rapidly. But no sooner was the rice believed to be safe, than prices fell throughout the division, and the relief works were speedily deserted. In Patna, Chumparun, and Tirhoot, the works undertaken by the district officers were closed during September, and in the course of a few weeks (*i.e.*, by the 31st October) a similar result followed in the other three districts.

25. The total sum expended on relief works under the charge of civil officers was Rs. 1,83,927-7-4. The canal works in Gya and Shahabad and the Gunduck embankment works in Sarun and Tirhoot, though they contributed no doubt to relieve distress, can scarcely be called purely relief works, and would possibly have been undertaken by Government under any circumstances.

26. As regards supervision of the relief works, the agency of sub-divisional officers and of ferry fund establishments was employed as far as possible by the district officers generally. In Gya an assistant engineer was placed at the disposal of the Magistrate and personally superintended the execution of the works. In Shahabad the services of the district roads engineer were largely employed. In Chumparun, where no extensive operations were carried on, the works were entrusted to petty contractors who made their own arrangements. In Patna, Sarun, and Tirhoot, no special agency was introduced. The sub-divisional officers undertook the direction of works in their respective jurisdictions; while in the sudder sub-divisions the district magistrates, with the assistance of their ferry fund establishments, exercised complete supervision. In each district it was fully understood that the laborers were to be paid daily, and the practice, I believe, was as a rule thoroughly enforced.

27. The only district in which gratuitous relief was distributed to the people was Shahabad. During the months of August and September, when prices were exceedingly high in this district, beggars flocked into the towns of Bhuboah and Sasseram, and collected in considerable numbers at Nasrigunge, in the vicinity of an indigo factory belonging to Mr. Solano. At Bhuboah they were relieved by voluntary contributions, at Sasseram from the charitable endowment funds, and at Nasrigunge by a special diversion of Rs. 1,000 from the grant made by Government for relief works. At the last-named place relief was at first administered by Mr. Nolan of the Irrigation Department, but subsequently Mr. Munro, assistant superintendent of police, was deputed specially to attend to the wants of the people. On his arrival Mr. Munro found that relief had been given indiscriminately, many in receipt of it being in apparently good circumstances. The distress, though severe for the time, shortly disappeared, and I have reason to believe that it would never have occurred at all had the zemindars from whose estates the beggars came to Nasrigunge been properly impressed with a sense of their own duties.

28. On reviewing the state of each district during the year 1869, it is at once clear that Patna suffered more severely than any other. Indeed, the cost of the relief works undertaken in Patna alone almost equalled that of the works in all the other districts put together. One of the main causes of this peculiarity was no doubt the isolated position of the Behar sub-division, which through the want of a good road communicating with a railway station is almost completely cut off from extraneous supplies. It was on this account that both the magistrate and myself in the beginning of 1869 so strongly advocated the construction of a good road from Bucktiarpore to Behar. The work was disallowed in consequence of the large expenditure it would have involved, as well as from a fear that it might interfere with the natural drainage of the country, which in some parts is intersected by numerous streams. Of course I do not intend to imply that if the work had been sanctioned any distress would have been averted during the past year: my only desire is to urge on Government the necessity of improving communications with Behar for the sake of the future.

29. Next to Patna I should place Sarun and Shahabad in the scale of distress; after these the sub-division of Tajpore in Tirhoot; and then Gya and Chumparun. The severity of the pressure in the three first districts (*i.e.* Sarun, Shahabad, and Tirhoot) may be in a great measure accounted for, as I have previously observed (*vide* paragraph 5) by the facts narrated in the 2nd paragraph of this report, when viewed in conjunction with the subsequent failure of two successive harvests.

30. One of the most interesting features in connection with relief works was the appearance of high-caste females under fictitious names in quest of employment in the Behar sub-division. The difficulty of extending relief to high-caste persons in times of scarcity has always been found very great, and it is satisfactory to see common sense at length prevailing over a foolish pride of race and family. In other respects, too, the past has not been without its lessons. It has taught the people that they have not merely to sow, and then to trust to

providence for a good harvest—it has taught them to resort more to artificial irrigation, and to appreciate the measures that are being taken by Government to increase and distribute supplies of water for agricultural purposes.

31. I have observed on several occasions that the people still cling most tenaciously to their old prejudice against grain dealers. No arguments will convince them that in times of scarcity non-interference on the part of Government with the grain trade is likely to avail to their benefit. Though I am by no means disposed to advocate such state interference as consists in fixing the prices of grain, yet I have had ample proof that the laws of supply and demand, as generally received, are to a great extent inoperative in this division. And I have reason to believe that importation by the State would not prove the dangerous measure which political economists assert it to be. It is a remarkable fact that the prices of grain have frequently been dearer in towns and places bordering on the railway (*e.g.*, Hajepore, Barh, Buxar, Arrah, Patna), than in more remote and less favored places. To affirm that there can be no such thing as a combination where, as a rule, none but buneyas will venture to import or sell grain, and where the trade is entirely in the hands of one class of persons, seems to me unreasonable. To show the fallacy of this doctrine I may mention that on one occasion when prices were very high in Patna, I consulted a wealthy banker named Syed Willayat Ali Khan on the subject of importing a large quantity of grain. He agreed to import on his own account Rs. 50,000 worth of rice, and made no secret of his intention. Even the rumour of this intended act had the effect of at once bringing down the price of rice in the city two seers per rupee. Similarly, in Sasseram it was possible for a large dealer to buy up all the grain that was imported into the town, and to make 100 per cent. profit upon it the very next day.

32. I must here express my conviction that nothing but the timely and liberal measures adopted by Government could have availed to avert a very serious calamity, and I desire at the same time to record my grateful sense of the facilities allowed me in the administration of relief.

33. In conclusion, I beg to bring to the favorable notice of Government the services rendered by the undermentioned officers:—

Mr. S. C. Bayley, magistrate of Patna.

„ C. B. Garrett, officiating magistrate of Sarun.

„ H. W. Alexander, magistrate of Shahabad.

„ G. J. S. Hodgkinson, assistant magistrate of Tajpore.

„ H. J. Newbery, assistant magistrate of Sarun.

Moulvie Jain Oodeen Hosain Khan, deputy magistrate of Behar.

Mr. C. E. Bailey, deputy magistrate of Patna.

„ McNamara, district roads engineer, Shahabad.

„ C. F. Worsley, special assistant to Commissioner.

To the last-named gentleman I am personally very greatly indebted for the interest and intelligence he evinced in his duties during the period I had the pleasure of being associated with him in office. The present report and appendix have been drawn up by him under my instructions: they would have been submitted much earlier but for the fact that some of the district completion reports had not arrived when Mr. Worsley was withdrawn from me, and since he has joined his present appointment he has had but little leisure to devote to the labor on which he had during the past twelve months been specially engaged.

APPENDIX.

CHUMPARUN.

THE scheme of relief works originally proposed for this district by the magistrate only contemplated the extension of three ferry fund roads at an outlay of Rs. 14,000, and was sanctioned by Government in letter No. 3992, dated 4th December 1868. But in the course of the year 1869 it was found inexpedient to expend the whole of this sum on the localities for which it had been assigned, and accordingly portions were, from time to time, diverted under the sanction of Government to the construction of works in other parts of the district which required assistance. The period during which relief works were kept open extended from 8th April to 16th October 1869.

The following statement shows the actual works on which expenditure was incurred, and the extent of employment afforded by each work to the people:—

Statement showing the expenditure incurred for relief operations in the district of Chumpanun.

Names of roads.	No. of Govern-ment order sanc-tioning the works.	Date of Govern-ment order sanctioning the works.	Amount sanc-tioned.	Date of com-mencement of the works.	DESCRIPTION OF THE PEOPLE EMPLOYED AND PAID FROM RELIEF FUND.			Amount ex-pended.	Date on which the works were closed.
					Men.	Women.	Children.		
Road from Moteeharee to Mozufferpore via Serahab ..	...	.....	Rs. As. P. .....	.....	67,722	2,387	420	Rs. As. P. 4,697 15 2	11th Oct. 1869.
Continuation of the same road towards Segowlee ..	3,952	4th Dec. 1868 ..	9,000 0 0	8th April 1869	6,598	...	...	483 0 0	11th " "
Distributed medicines to the persons who were sick at the town of Betteah ..	...	.....	.....	.....	...	...	...	300 0 0	" "
Salary of two native doctors and their travelling allowance ..	...	.....	.....	.....	...	...	...	239 6 4	" "
Road from Rajapore to Burhurowah ..	2,268	10th June 1869 ..	2,000 0 0	16th March "	14,570	...	...	1,050 0 0	13th Aug. "
Road from Segowlee to Lowreah, and branch from Lowreah to Betteah ..	4,880	20th Aug. " "	3,000 0 0	8th April "	24,724	3,878	3,717	4,066 0 0	11th Oct. 1869.
Betteah town, for filling up ditches and Nullahs ..	4,004	7th July " "	3,000 0 0	3rd July "	7,570	3,263	*2,185	1,471 11 0	16th " "
Total ..	...	.....	17,000 0 0	.....	1,21,184	9,528	6,322	12,308 0 6	.....

With regard to the extent and general utility of the works undertaken, the magistrate remarks as follows:—

“The summary of the relief works then has been that 67 miles of road (besides 10 miles of old road repaired between Mooteehari and Segowlee) have been opened out at a cost of Rs. 12,308-0-6. Much remains to be done before communication along these lines can be said to be perfect, but every year allotments from the ferry fund will improve and perfect the line of roads which have now been made.

“The advantages which the district will derive will be great; already carts are being used where formerly only bullocks and ponies were employed. Formerly, to reach Lowreah police station from Segowlee, the road had to be taken to Betteah, 15 miles, and then from Betteah a cart track of 16 miles. There is now direct communication from Segowlee to Lowreah. The greater portion of the road was raised and the money expended under my own personal supervision.”

GYA.

THE information received from this district has been so extremely meagre that no satisfactory statement can be prepared. Towards the close of 1868, the worst anticipations were entertained by the Magistrate, and Government in letters No. 3776, dated 19th November 1868, and No. 7379,

Public Works Department, dated 18th December 1868, sanctioned the construction of two roads marginally noted at an outlay of Rs. 33,000.

The first of these two works was commenced in January 1868, and remained open till the end of August, during which time the sum of Rs. 5,433-1-1 was expended upon it. As the monthly expenditure was on an average about Rs. 680, the daily number of persons employed (except in May, when the expenditure was unusually high, and amounted in round numbers to Rs. 1,800) probably never exceeded a few hundreds. I speak with uncertainty on this point because (as Government are aware) I have never been able to obtain returns of the actual number of laborers employed at any time.

With regard to the second work, nothing was done to carry it out, the state of the district having subsequently proved to be nothing like so bad as was first represented by the magistrate.

PATNA.

Relief works were opened in this district on 18th January 1869, and were closed by the 28th September last.

The subjoined statement gives nearly all the information that appears to be necessary, and I need only add that the works were well executed and will be of much service to the district, especially those numbered 2, 4, 6, 18, and 20. The actual cost of the works, Rs. 88,342-11-3, falls considerably short of the amount that at one time seemed likely to be required, so much as Rs. 1,23,600 having been originally sanctioned for purposes of relief. Owing to their being somewhat suddenly closed, some of those works have not been completely finished.

Abstract of relief works in the district of Palna from January to September 1869.

Number of Board.	Particulars of works.	Length in Miles.	Males.	Coolies.	Women.	Boys.	Boys.	Girls.	Total.	Amount.	Rs. As. P.	Number and dates of orders sanctioning each work.
1	Repairs to road from Barh to Duryapore	20	1,504	21,060	52,537	1,2971	8,211	6,107	1,02,450	6,913	1 6	Board's letter No. 7081, dated 29th December 1868, and Government No. 3836, dated 30th June 1869.
2	Repairs to road from Behar through Sela to Rancebaugh	8	1,179	19,819	55,258	6,507	4,877	4,020	91,660	5,221	13 6	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
4	Repairs to road from Hilsa to Rancebaugh	21	2,880	49,860	68,537	51,890	15,301	11,743	2,00,215	13,789	6 6	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
5	Repairs to road from Meatapore to Mohaballypore	32	1,714	28,371	37,021	19,282	12,041	9,756	1,08,215	7,311	5 3	Board's letter No. 7081, dated 29th December 1868, and Government No. 3482, dated 15th June 1869.
6	Repairs to road from Phoolwarre to Surroumdha ghat	16	1,271	26,698	36,338	16,314	8,305	6,064	95,168	6,508	11 6	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
7	Repairs to road from Dinapore to Nowbutpore	10	215	4,723	3,108	3,830	1,613	384	13,933	963	4 3	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
8	Repairs to road from Dinapore to Musowree	13	621	10,533	15,298	4,713	4,568	3,772	39,505	2,808	14 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
9	Repairs to road from Rampore to Pale-gunge	13	87	14,273	19,112	8,496	6,945	5,993	55,686	3,945	9 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
17	Repairs to road from Behar to Ansthan	5	1,367	22,453	64,728	10,159	4,528	3,641	1,06,876	7,381	8 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
18	Opening a fair-weather road from Musowree to Ekanurserai	16	1,213	18,017	31,384	11,245	6,906	7,424	76,319	5,983	10 6	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
19	Digging tank at Hurnant	...	414	9,357	15,000	3,352	1,869	1,444	26,056	2,489	12 0	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
20	Repairs to road from Behar to Bakreapore	12	2,896	43,719	90,867	18,830	11,249	8,770	1,83,291	12,825	0 0	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
21	Digging tank within the compound of Barh cutcherry	...	447	6,360	16,243	3,329	1,793	1,139	29,302	2,007	0 0	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
22	Improving tank near the Bankipore railway station	...	146	1,297	2,362	1,669	737	330	6,441	441	0 0	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
23	Improving tank west of police hospital	...	503	5,930	11,444	3,345	1,850	2,034	24,986	1,763	3 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Improving tank east of Baugh Juffer Khan	...	421	4,457	10,221	4,228	895	858	21,070	1,486	0 0	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Improving tank south of Bankipore railway station	...	276	4,125	8,001	2,770	1,399	1,477	18,048	1,300	2 6	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Digging tank at Adampore	...	11	278	545	91	13	...	938	387	3 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Digging tank at lunatic asylum	...	66	2,547	4,331	1,873	208	1,461	10,486	837	9 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Improving road from Barh cutcherry to Julgobind	...	171	1,858	4,605	1,553	23	166	8,356	592	15 9	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Constructing a well at Behar	...	...	...	...	...	...	...	...	224	10 0	Board's letter No. 7081, dated 29th December 1868, and Government order No. 3837, dated 30th June 1869.
	Constructing a ghat in the tank west of police hospital	...	...	...	...	...	...	...	...	439	1 0	Met from the fund for the improvement of head-quarters.
	Purchasing kodakee's &c.	...	...	...	...	...	...	...	...	2,413	10 6	
	Total	...	18,173	2,95,693	6,57,680	1,87,627	93,161	76,664	12,25,951	88,349	11 3	

SARUN.

The total amount granted for relief work in this district was Rs. 44,570, which was sanctioned as follows:—

					Rs.
By Government letter No. 767, dated 9th February 1869	...				6,381
Ditto " " 1011, " 18th " "	...				20,000
Ditto " " 3873, " 3rd July "	...				18,189
Total	...				44,570

Of this sum Rs. 43,056-7-9 was actually expended.

Table I. shewing the works undertaken during the dry season; and the daily average number of all classes.

No.	Name of Works.	DAILY AVERAGE NUMBER OF COOLIES EMPLOYED DURING THE MONTH OF					Total cost.	Duration of time that each work was open.
		January 1869.	February 1869.	March 1869.	April 1869.	May 1869.		
							Rs. As. P.	days.
1	Digwora to Gurkha Pyjumbepore, Tajpore, Moharajgunge, and Sewan road, No. 1	378	405	226	195	47	3,635 0 6	151
2	Chuprah to Ramcollah Road, No. 27	17	67	140	111	42	765 1 0	151
3	Sewan station Road, No. 17	26	96	...	82	245	500 0 0	126
4	Redigging Elliot's tank at Chuprah	135	86	458	986	1,188	5,815 3 0	138
5	Chynpore to Hossanpore, a road via Audur, No. 11	...	72	63	21	...	654 1 6	89
6	Audur via Ghaighat to Durrowly Road, No. 13	...	79	55	14	...	563 13 6	89
7	Audur to Nurehghat road, No. 14	...	72	65	18	...	614 6 0	89
8	Sewan to Audur road, No. 15	...	73	70	19	...	619 11 0	89
9	Nobeegunge Railway Feeder road	...	347	326	400	...	2,500 0 0	83
10	Rajaputty to Ramcollah, Amnour Parsee and Sutulpore, Gurkha, and Doorungunge road, No. 3	...	304	190	...	...	1,500 0 0	55
11	Redigging Burragown tank	...	38	81	27	11	908 7 3	120
12	Redigging Sutul tank	...	...	164	219	176	2,074 0 6	82
13	Redigging Moharajgunge tank	...	257	292	352	306	3,050 10 3	120
14	Redigging Pursa tank	...	...	90	25	62	300 0 0	85

Table II. showing the works undertaken during the rainy season and the daily average numbers of all classes.

Number.	Name of Works.	DAILY AVERAGE NUMBER OF COOLIES EMPLOYED DURING THE MONTH OF					Total cost.	Duration of time that each work was open.
		June 1869.	July 1869.	August 1869.	September 1869.	October 1869.		
							Rs. As. P.	Days.
1	Chuprah to Ramcollah	149	146	122	42	...	613 10 3	110
2	Sewan station road	1,351	100	35	83	23	1,759 13 0	131
3	Redigging Elliot's tank	1,867	415	185	...	...	2,804 13 0	68
4	Rajaputty to Ramcollah, Amnour to Pursa and Sutulpore, Gurkha to Doorungunge	200	...	...	279	467	1,255 9 9	153
5	Sutulpore tank	150	...	...	...	...	25 125 6	17
6	Moharajgunge tank	179	109	...	...	...	673 0 9	47
7	Pursa tank	73	...	...	...	...	100 0 0	14
8	Portion of road No. 8 (Bhaguputty)	...	345	326	...	...	1,390 1 9	55
9	Moharajgunge to Sewan road	...	102	161	130	...	802 7 9	62
10	Chuprah to Sutturghat road	...	...	385	321	...	919 5 0	34
11	Ditto to Rewaghat road	...	...	432	305	...	1,466 4 6	55
12	Portion of road No. 8, (Meergunge to Gopalgunge)	...	...	284	283	66	1,265 9 0	76
13	Metalling Chuprah to Doorungunge road	...	...	148	228	140	1,050 7 9	78
14	Moharajgunge to Modhapore road	...	...	...	392	397	1,500 10 0	49
15	Portion of road No. 8, Burragown to Koochikott	...	...	...	174	513	1,201 6 0	49

The relief works were commenced on 14th January 1869, and were finally closed on the 31st October following.

SHAHABAD.

Statement shewing the Relief works undertaken in the District of Shahabad.

Names of works.	Nature of works.	Amount sanctioned for each work.	Number and date of sanctioning letter.	Amount expended on each work.	REMARKS.
		Rs. As. P.		Rs. As. P.	
Sohur and Arrah Fredu road	Earth work raising	4,000 0 0	Government order No. 1619, dated 19th March 1869.	4,930 15 1	
Sasseram and Chowsah road	Ditto ...	6,950 0 0	Ditto ...	11,438 14 11	
Sasseram and Arrah road	Repairs with work	4,500 0 0	Ditto ...	5,377 11 0	
Nasrigunge and Dehree road	Repairs ...	1,423 5 10*	.....	1,193 8 2	* Sanctioned in Commissioner's letter No. 46R, dated 11th August 1869, payable from local fund.
Petty works in Bhubooah	Ditto ...	500		500 0 0	† Rs. 1,000 were sanctioned for works in Bhubooah by Government order No. 2577, dated 25th July 1869.
One mile of canal excavation at Monkin	Excavation	.....	.....	575 0 9	} Rs. 8,000 were sanctioned for the completion of relief works and to provide for canal works,—vide Government order No. 4605, dated 9th August 1869.
Byhea and Buxar road	.....	600 0 0	Government order No. 1619, dated 19th March 1869.	600 0 0	
Total ...	.....	17,973 5 10	.....	24,616 1 11	

The relief works were opened on 15th January 1869, and closed in the last week of October following. The total amount expended upon them during that period being Rs. 24,616-1-11.

The following remark of the district roads engineer, Mr. McNamara, under whose able superintendence most of the works were executed, appear worthy of insertion:—

"Sahur and Arrah Road.

"This work consists of twenty miles of road, nine miles of which are entirely new, connecting the railway at Arrah with the practicable portion of the important road leading along the left bank of the Soane to the south of the district. Below Sahur the old line of road along the Soane, has now been superseded by the new road, is subject to heavy inundation, and the portion leading under the railway east of Arrah is generally impracticable during the rains. The new road runs along a high ridge above flood level, and has been raised about a foot and a half above local drainage, with a regular and evenly-shaped cutting on each side. The road slopes have been mostly turfed and the surface levelled and dressed, so that the entire length from Sahur to Arrah is now drivable from beginning to end.

"Next in importance comes the road from Sasseram to the Railway at Chowsah. The necessity for this road was strongly urged by the local authorities during the enquiry that was held after the famine of 1866, and some little work was commenced on it at that time. It traverses a much neglected part of the district 39 miles in length, which was little visited owing to the want of the means of communication through it. The road consists of an embankment raised about two feet above flood level, extending throughout the length of Pergunnah Chowsah, 15 miles (only 13 miles have been actually raised), and continued into Pergunnah Sasseram, 9 miles, in all 24 miles, leaving 15 miles near Sasseram remaining to be raised; but communication has been opened throughout, and the work is a lasting memorial of the late relief operations.

"Next is the repair of the Sasseram and Arrah road, near Peeroo and Arrah. This is the most important line of communication in the district, and the necessity that arose for the commencement of relief works in Pergunnah Peeroo afforded the opportunity for the raising of the portion of the road south of Peeroo, which had worn away below the level of the surrounding rice fields, and was a source of constant complaint; also some raising was applied to three miles of road near Arrah, and superficial repairs were executed to the length between Peeroo and Arrah. No detailed statement of the number of laborers employed on each work has been received from the magistrate. I find from my own office, however, that in the early part of June the average daily number of laborers was as low as 1870, that by the end of the month it had increased to 1470, that a slight decrease was perceptible during the first half of July, that the number after that again rose to 1470, and that no important diminution again occurred until the middle of October.

TIPPOOT.

Detailed statement of Relief Works, &c.

Name of works.	Order sanctioning the works.	Date of commencement of the works.	Date of completion of the works.	Number of people employed on each work.	Amount sanctioned for each work.	Amount expended in each work.	Balance.	REMARKS.
					Rs. As. P.	Rs. As. P.	Rs. A. P.	
1 Gaspore to Hetumpore road in Tajpore Sub-division	Government No. 764 dated 9th February 1869, with Commissioner's memorandum No. 14R, dated 13th idem	11th April 1869	11th July 1869	3,797	2,069 5 0	2,069 5 0		
2 Dulsingarai to Singhia, in Tajpore Sub-division	Government No. 2979 dated 22nd May 1869, with Commissioner's memorandum No. 34R, dated 24th May 1869	20th May 1869	12th July 1869	2,259	1,169 5 6	1,113 7 3		
3 Gaspore to Jettanarpore, in Tajpore Sub-division	Government No. 3228 dated 2nd June 1869, with Commissioner's memorandum No. 364, dated 5th June 1869	30th May 1869	23rd Sept. 1869	2,575	1,921 3 9	1,520 10 4		
4 Burnghat to Shahpore, in Tajpore Sub-division	Commissioner's No. 404, dated 24th June 1869, and No. 44, dated 7th July 1869, forwarding copy of the Government order No. 2525 dated 30th June 1869	29th June 1869	23rd Sept. 1869	132	Met out of the above grant.			
5 Ghatara, towards Bazetpore, in Tajpore Sub-division	Government's order No. 3960, dated 7th July 1869, with Commissioner's memorandum No. 4711, dated 12th idem	13th June 1869	24th July 1869	920	505 5 4	525 8 6		
	Total ...	...	...	...	5,665 3 7	5,228 15 1	436 4 6	
6 Korieah Ghaut to Seetamurhee in Head-Quarters division	Government order No. 2616, dated 2nd May, with Commissioner's No. 26R, dated 12th idem	1st May 1869	31st Augt. 1869	9,926	5,705 8 0	4,942 1 9	763 6 3	
	Grand Total ...	...	...	...	11,370 11 7	10,171 0 10	1,199 10 9	

The advantages of the works in a general point of view are thus described by the magistrate:—

"The following roads have been made and repaired in this district:—

- | | |
|--------------------------------------|----------------------------|
| 1. Gaspore to Hetumpore | } In Tajpore sub-division. |
| 2. Dulsingarai to Singhia | |
| 3. Gaspore to Jettanarpore | |
| 4. Ghatara towards Bazetpore | |
| 5. Burnghat to Shahpore | |
| 6. Korieah Ghaut to Seetamurhee road | Head-Quarters division. |

"The Gaspore to Hitumpore road was commenced on the 11th of April. It leads from Gaspore, a village 6 miles to the south of Tajpore, through the centre of the Sub-division to join Hetumpore ghat opposite to Barh. At first this road was so bad that it was impossible even for carts to pass; now the traffic from the north can easily go straight through the sub-division to Sultanpore ghat.

"A bund has been constructed across a "chowe" (lake) on the Dulsingsaraj to the Singhia road which was heretofore impassable in the rains, and was in bad repair at all times. This road conveys the traffic from the large bazar at Rossarah towards the Ganges.

"The road from Gaspore to Jitwarpore is really a continuation of the Gaspore and Hitumpore road northward to the bazar of Mukurdayee. A direct road from Durbhunga to Nogurbustee on the opposite bank of the Gunduck was in contemplation, and by making this road the distance to the Ganges from the north would be shortened by some five miles, and the necessity of crossing a ghat avoided.

"The road from Ghataro towards Bazeedpore leads from a point in the middle of the Hitumpore road towards the Chumtha ghat, on the Ganges.

"The work in the Burnah ghat and Shahpore road was merely of the nature of repairs to a road, which, though an important one, is not borne in the list of ferry fund.

"The Korluhiyah ghat to Seetamurree road was commenced on 1st May. This road was in a bad state; it is about twelve miles north from head-quarters, and leads to the Seetamurree road."

It will be observed that the statements given in this appendix are not all drawn up in exactly the same form, but I trust they will be found to contain all necessary information.

Working of the Moorshedabad District Post.

From C. K. DOVE, Esq., Officiating Postmaster-General, Bengal, to the Secretary to the Government of Bengal,—No. ²⁴²²⁰_{D.D., No. 20}, dated Fort William, the 24th March 1870.)

In forwarding the enclosed copy of a memorandum No. 24219 of this date, briefly reviewing the experimental working of the Moorshedabad district post by the agency of this department, I beg to enquire whether His Honor the Lieutenant-Governor of Bengal is satisfied with the results shewn.

2. An expression of opinion on the part of Government is required, before I can obtain permanent sanction to the temporary supervising establishment paid by the imperial post, and shewn in the margin of the first paragraph of my memorandum.

Memorandum from C. K. Dove, Esq., Officiating Postmaster-General, Bengal,—(No. 24219, dated Fort William, the 24th March 1870.)

THE management of the district post in the Moorshedabad district having been transferred to this department by order of the Government of Bengal, No. 1963, dated 25th May 1869, and the supervising agency having been sanctioned, charge was taken on the 1st July 1869. The results of the working of the experiment during the six months will briefly be reviewed.

2. Contrasting the chargeable correspondence received at and despatched from the several district post offices in Moorshedabad, during the experimental period, with the results of the corresponding months of 1868 (*vide* statement No. 1), it appears that the total number of covers received and despatched has very nearly doubled, while the income has risen from Rs. 128-10-6 to Rs. 219-9. This is very satisfactory, and shews an increase of Rs. 90-14-6.

3. Statement No. 2 exhibits the average rate of speed at which the mails travelled, namely, 4-0-3 in 1869 against 3-2-15 in 1868. This is also a satisfactory improvement.

4. A total distance of 99 miles is travelled by district post runners in Moorshedabad, and is divided between two overseers, as shewn in statement No. 3.

5. It will be observed from statement No. 4 that two new experimental post offices, seven rural messengers, and three letter boxes have been established. Besides these letter boxes, several others served by rural messengers, special peons, and delivery peons have been posted at or close to every important village throughout the district, and arrangements are still in progress to post more of them.

6. The appointed sub-inspector has, in all, ten branch post offices, seven district post offices, and thirteen rural messengers under his control, as will be seen from statement No. 5.

9. The accompanying copy of the magistrate of Moorshedabad's opinion will shew that he is satisfied with the result of the management of the district post by the Postal Department.

No. 1.

Comparative statement of Postage realized from the District Post Offices in the district of Moorshedabad from July to December 1868 and 1869.

NAMES OF POST OFFICES.	1868.			1869.		
	PRIVATE.		SERVICE.	PRIVATE.		SERVICE.
	No.	Rs.	As. P.	No.	Rs.	As. P.
Mirzapore ...	374	22	3 6	865	48	5 0
Gokurna ...	493	32	11 0	750	41	9 6
Dowlut Bazar ...	284	16	3 6	543	31	10 0
Bhuddruck ...	412	23	3 0	530	30	1 6
Kallyangunge ...	281	18	7 6	427	25	15 0
Peertollah ...	265	15	14 0	388	22	3 6
Sootee ...		0	0 0	367	19	12 6
	2,109	128	10 6	3,865	216	9 0
			Increased by ...	1,756	90	14 6

No. 2.

Comparative statement of the pace at which the mails have been carried on the district post lines in the district of Moorshedabad, during July to December 1868 and 1869.

NAMES OF LINES.			AVERAGE RATE OF SPEED.	
From	To	Length in miles.	During July to December 1868.	During July to December 1869.
			M. P. F.	M. P. F.
Berhampore ...	Jellenghee ...	32	2 6 26	3 1 13
Ditto ...	Patkabary ...	26	2 5 13	3 0 26
Gokurna ...	Kallyangunge ...	8	3 4 26	3 7 13
Kandhee ...	Bharatpore ...	6½	3 4 26	4 4 0
Ditto ...	Khurgram ...	6½	3 2 13	4 1 13
Jengunge ...	Bhadrehat ...	5	3 1 13	3 6 33
Ourungabad ...	Sootee ...	4	0 0 0	5 0 0
Shamseergunge ...	Huзеerpoora ...	6	3 4 33	4 1 13
Junghypoor ...	Mirzapore ...	5	3 5 13	4 2 0
		99	26 3 3	36 0 31
Average pace on all the line per hour ...			3 2 15	4 0 3